

# Exploring New Territories





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# Continuity of Learning

Continuity of learning has become a hot topic as school districts deal with possible pandemics and natural disasters that result in schools closing for extended periods of time. The discussion around continuity of learning also provides a comprehensive framework for the integration and use of virtual learning technologies and strategies. This framework can be used to guide the integration of virtual learning tools in a regular classroom, the use of virtual learning tools with students who are hospital/homebound, and the provision of virtual instruction.



Discuss the following “Hot Topics” with your school staff. Adapted from the Association for K-12 Online Learning (iNACOL) <http://www.inacol.org/col/> : The USDOE <http://www.ed.gov/admins/lead/safety/emergencyplan/pandemic/guidance/continuity-recs.pdf> : & the FLDOE recommends that school districts identify the following for short-term preparation <http://info.fldoe.org/docushare/dsweb/Get/Document-5581/dps-2009-207.pdf>

## Technologies:

- Phone conferencing: Make sure teachers and administrators know how to use phone conferencing services. Review the availability of speaker phones and conference phones.
- Web-conferencing solutions: Hold synchronous class meetings with teachers; train teachers in web meeting software.
- Learning Management System solutions: Host asynchronous and synchronous class meetings.

## People:

- Train teachers in use of the distance learning tools for short-term and long-term solutions. Support their use of distance learning tools blended with regular classroom instruction.
- Provide tutors through online tutoring. Conduct some classroom activities online on a regular basis so students get used to online instruction.
- Provide training to parents and students on how to access these tools from home in the case of a school closure.
- Do a review of any accessibility needs for students with disabilities.

## Materials:

- House instructional materials online. If syllabus, materials and full online courses are available over the Internet, there are more in-depth approaches to continuity of learning.
- Consider open source educational resources (digital, sharable, re-usable, adaptable, creative commons licensing) that would be useful in distance and blended, online learning.
- Invest in digital content and instructional materials that could be delivered at a distance and used in online learning.





**Getting Started** – Here are some tips on how to begin connecting teachers to students outside the classroom. These are also great ideas to start using with hospital/homebound programs.

### Conference Call Tips

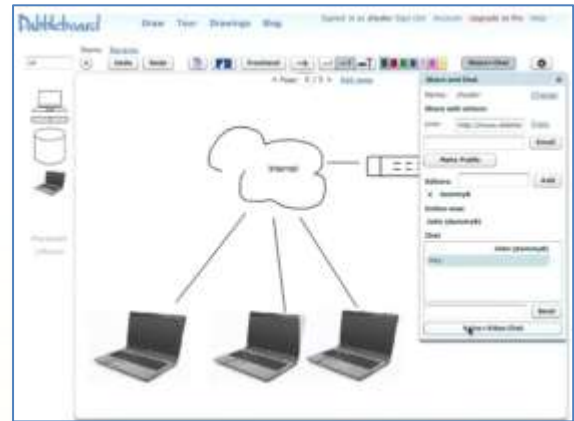
Conference call services can be used to connect one or more students with a teacher/classroom. Regular speaker phones and conference call phones may be used. Considerations include:

- The provision of a teleconference bridge service.
- The teacher using a wireless headset or staying close to the classroom phone to ensure the best sound quality from the classroom to the student.
- The use of a conference call phone with external microphones in the classroom to allow group interaction between students in the classroom and outside students.

### Online Interactive Whiteboards

Teachers can use these interactive whiteboards in their classroom and students who are home can log in and view the teacher's work as well as add their own in real time. Combined with a speaker phone or conference call these whiteboards enhance the audio connection with an interactive visual work environment.

1. CoSketch - <http://www.cosketch.com/> . online multi-user digital whiteboard
2. Dabbleboard - <http://www.dabbleboard.com/> . online collaboration application centered around a whiteboard
3. Twiddla - <http://www.twiddla.com/> . a web based meeting "playground" with a whiteboard



### Video Conferencing & Virtual Meetings

Video conferencing services offer a variety of features, starting with multiple audio and video connections. Additional features often include interactive whiteboards, desktop sharing, PowerPoint sharing, web tours, text chat, and polling/surveys. Note that video conferencing does not have to be one-to-one. With a large screen or LCD projector and a speaker phone the connection can be one teacher to a group or to several groups.

1. Skype - <http://www.skype.com> . a basic audio service for audio calls online as well as conference calls. video conferencing is available one-to-one.
2. Tinychat - <http://tinychat.com/> . free online video chat service for up to 12 people or private video calls for 2 people
3. Elluminate vSpaces - <http://www.elluminate.com/products/vspaces/index.jsp> . full featured web conferencing service to support distance learning activities with audio, video (up to six cameras at a time), desktop sharing, file sharing, web tours, session recording, and more.
4. Elluminate vRoom - <http://www.learncentral.org/user/vroomreg> - free version of Elluminate for up to 3 connections at a time. does not record meetings
5. Adobe Connect - <http://www.adobe.com/products/acrobatconnectpro/> . full featured web conferencing service to support distance learning activities with audio, video, desktop sharing, file sharing, web tours,

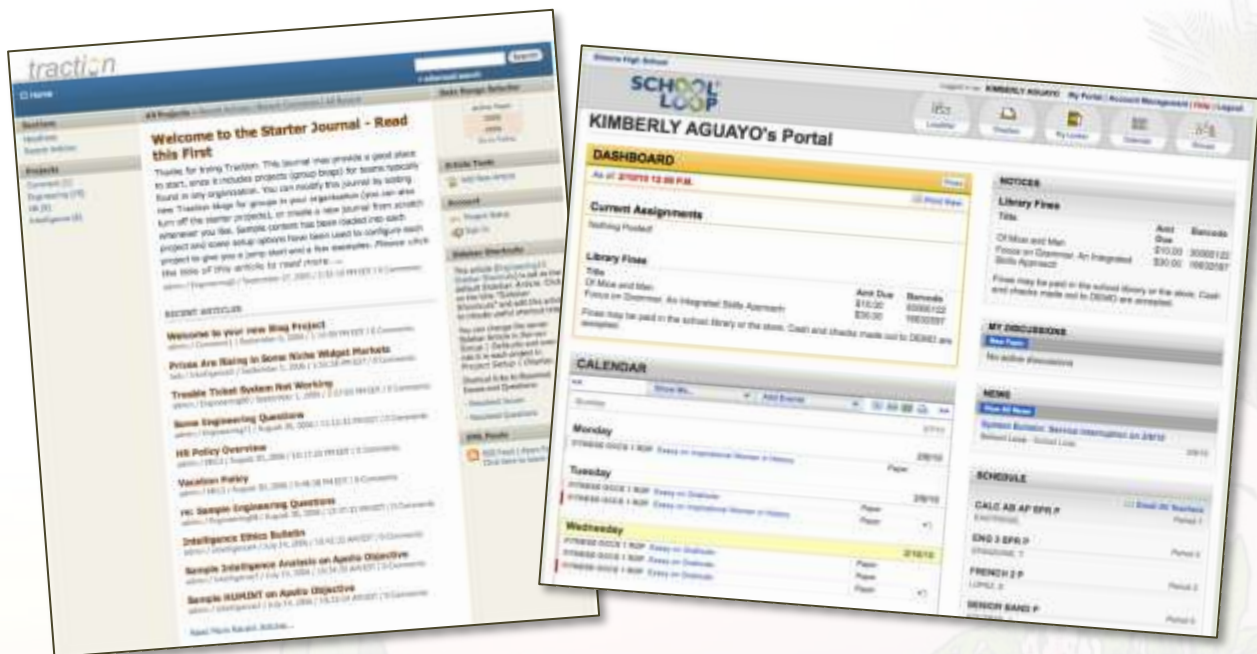




session recording, and more. white papers at

<http://www.adobe.com/products/acrobatconnectpro/whitepapers/>

6. Acrobat.com - <https://acrobat.com/#/> . free online meeting and applications that include a version of Adobe Connect for up to 3 connections, online word processing, presentation software, and spreadsheets
7. Talking Communities - <http://www.talkingcommunities.com/index.php> . full featured web conferencing service specifically designed to be highly accessible, especially for students/teachers who are blind/visually impaired and use a screen reader like JAWS. the single conference room service is very affordable; priced by the number of users
8. Second Life – <http://www.secondlife.com> . virtual worlds where school districts can create secure virtual school buildings in which students and teachers can meet
9. OpenSimulator - [http://opensimulator.org/wiki/Main\\_Page](http://opensimulator.org/wiki/Main_Page) . open source virtual worlds where school districts can create virtual school buildings in which students and teachers can meet



## Learning/Content Management Systems

From posting assignments online to conducting classes, these resources will help blend online and classroom instruction.

1. Gaggle - <https://www.gaggle.net> . provides a safe environment for students to use a variety of online applications and learning resource management tools
2. Traction - <http://traction.tractionsoftware.com/traction> . secure threaded discussion and document management system. a free version for up to 5 users is available for download
3. mySchoolog - <http://www.myschoolog.com/> . online tools for students. Includes organization tools, calendars, document storage, to do lists, and more
4. AirSet - <http://www.airset.com> . group collaboration applications that include calendars, file sharing, word processing, spreadsheets, text messaging to cell phones, and more
5. School Loop <http://www.schoolloop.com/> . free web and content management system for schools with additional available features for pay
6. Desire2Learn Sparks - <http://www.desire2learn.com/sparks/> . learning management system from Desire2Learn for K-12 to support elearning programs and online professional development
7. Eduslide - <http://www.eduslide.com/> . learning management system in open source and hosted versions



8. Curriki – <http://www.curriki.org/xwiki/bin/view/Main/WebHome> . online community where teachers, students, parents, and others can create and post content
9. Schoology - <https://www.schoology.com/home.php> . free digital learning management system where students and teachers can easily create, share, and manage instructional materials and activities
10. Grou.PS - <http://grou.ps/> . online service where you can create your own personal wiki, social network, Flickr, YouTube, and blog. includes calendars, chats, and file management
11. Moodle - <http://moodle.org/> . open-source course management system

### Applications in the “cloud”

There are many online applications for word processing, spreadsheets, presentations, homework and project management, calendars, etc. With the documents and files being stored in the “cloud” (online), students and teachers can work together from a wide variety of geographical locations.



1. Google Docs - <http://docs.google.com> . includes collaborative online word processing, spreadsheets, presentations, and form creation for creating online questionnaires
2. ZOHO - <http://www.zoho.com/> . includes mail, collaborative word processing, spreadsheets, presentations, notebooks, wikis, planners, and other tools
3. SlideRocket - <http://www.sliderocket.com/> . online presentation software with a free “lite” version and a pay version
4. WriteOnline - <http://www.cricksoft.com/uk/writeonline/> . online word processor with text-to-speech, word prediction, and word bars to provide support and accommodations for students with disabilities
5. Acrobat.com - <https://acrobat.com/#/> . free online meeting and applications that include a version of Adobe Connect for up to 3 connections, online word processing, presentation software, and spreadsheets
6. WebSlides - <http://slides.diigo.com/> . a way to bundle and share web based information



### Applications on USB Flash Drives

Installing applications and file storage on USB drives makes it easy for students to take their work and applications from one computer to another.



1. AccessApps - <http://www.rsc-ne-scotland.ac.uk/eduapps/accessapps.php> . a free resource of selected applications bundled together to provide productivity tools as well as accessibility and accommodation tools for students with disabilities. includes a huge selection of applications
2. PortableApps - <http://portableapps.com/> . resources for applications that will run from a flash drive
3. Pendriveapps - <http://www.pendriveapps.com/> . another extensive resource for apps that will run from a flash drive

### Web 2.0

The “first” web was considered a read only web. Most of us would search for information and would read web pages. Web 2.0 is used to describe the changes that have occurred that support our ability to actually use the web as a work environment: doing word processing, making presentations, editing photographs, sharing videos, storing files, meeting with people, just about anything you can think of. Many of the resources listed above are considered examples of the Web 2.0, but there are so many more. Where to start?

Web 2.0 Indexes/Lists



1. GO2WEB20 - <http://www.go2web20.net/> . extensive collection of links to all things Web 2.0. this is the place to start: just type in a word to describe what type of tool you are looking for (such as "presentation") and GO2WEB20 will give you a list of online tools ready for you to explore
2. SEOmoz's Web 2.0 Awards - <http://www.seomoz.org/web2.0> . 174 online sites considered some of the best Web 2.0 tools in categories such as: books, collaborative writing and word processing, education, maps, music, photos and visual imaging, video, visual arts
3. Web 2.0 Backpack for Students - [http://www.readwriteweb.com/archives/web\\_20\\_backpack\\_web\\_apps\\_for\\_students.php](http://www.readwriteweb.com/archives/web_20_backpack_web_apps_for_students.php) . collection of "must have" Web 2.0 tools for students. categories include Office replacements, note taking, mind mapping, studying, bookmarking, calculations, and calendars



#### Web2.0 Integration Ideas & Tips

1. Web 2.0 in Education - <http://www.shambles.net/pages/learning/ict/web2edu/> . list of articles and information on the use of Web 2.0 tools in education
2. Johannes Ahrenfelt - <http://www.johannesahrenfelt.com/2009/08/26/engaging-web-2-0-tools-to-use-in-the-classroom/> . ideas about learning, ICT and pedagogy
3. NetLingo - <http://www.netlingo.com/acronyms.php> . list of internet acronyms and text message jargon

#### Web 2.0 Examples

1. PollEverywhere - <http://www.poll Everywhere.com/> . online polling service that can be used with text messages from cell phones, Twitter, or the web
2. Stixy - <http://www.stixy.com/> . online bulletin board with notes, photos, documents, and to-do lists that can be shared by a group or class
3. Poodwaddle - <http://www.poodwaddle.com/index.htm> . tool for creating your own homepage with search tools, dictionaries, calculators, and more
4. VoiceThread - <http://voicethread.com/#home> . collaborative work environment where students can post text, audio, images, and video
5. Glogster EDU - <http://edu.glogster.com/> . online tool for creating multimedia posters with text, photos, videos, graphics, sounds, drawings, and more
6. Wikispaces - <http://www.wikispaces.com/> . free wiki tool. the free version is ad supported, but if you are using the wiki for K-12 education you can request a free upgrade with no ads
7. Quia - <http://www.quia.com/web> . inexpensive tool to create online activities, quizzes, calendars, and surveys. grades and quiz/activity results are available online
8. Flickr Toys - <http://bighugelabs.com/> . an amazing collection of online apps for creating personalized magazine covers, posters, movie posters, jigsaws, etc.
9. Notely - <http://www.notely.net/> . online tools for students to help with organization and time management



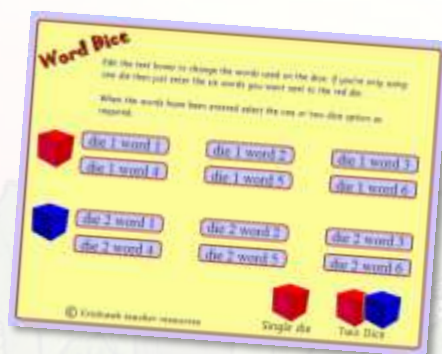
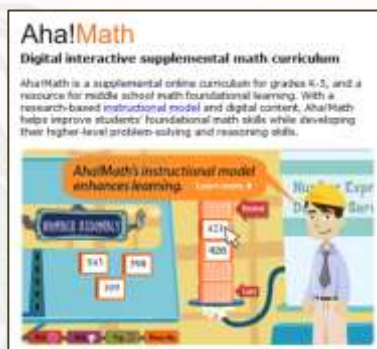


# Teacher Tools & Resources

Teacher tools are great for classroom use as well as for distance learning and virtual instruction. Many of them provide a way to create and share learning activities in the classroom and online.

## General Curriculum Resources

1. The File Cabinet - <http://thefilecabinet.pbworks.com/> . online resources for grades K-8 in a variety of curriculum areas as well as resources on Web 2.0 tools
2. Word Dice - <http://www.crickweb.co.uk/assets/resources/flash.php?&file=worddice> . online tool for creating and using word dice (can choose one or two dice)
3. Aha!Math - <http://www.easytech.com/ahamath/index.htm> . web-based supplemental math curriculum for grades K-5 that includes interactive games, lessons, and activities in a variety of contexts
4. Mathtrain TV – <http://www.mathtrain.tv> . free online resource of math tutorial videos created by students for students
5. SAS Curriculum Pathways - <http://www.sascurriculumpathways.com/> . online core curricula resources for grades 8 and above; free for U.S. educators
6. Compass Learning Odyssey - <http://www.compasslearningodyssey.com/> . online standards aligned PreK-12 curricula
7. Internet Resource Links - <http://main.vasj.oh.k12us.com/sgiddings/Internet%20Resource%20Links> . collection of links on topics like “20 sites to create online quizzes” and “50 ways to use wikis in the classroom”



8. Teachers' Domain - <http://www.teachersdomain.org/> . digital media for the classroom
9. The Smithsonian - <http://www.si.edu/> . the Smithsonian online for students and teachers
10. Map Maker - <http://nationalatlas.gov/natlas/Natlasstart.asp> . create maps online that show topography, climate, biology, geology, history, etc.
11. Docjax - <http://www.docjax.com/home/index.shtml> . a search engine for documents such as ebooks, PowerPoints, pdfs, etc.
12. Accessible Books - <http://www.setbc.org/setbc/accessiblebooks/> . early reading material (up to grade 3) that has been put in PowerPoint formats or Clicker formats to increase the accessibility of the books
13. Questia – <http://www.questia.com> . online library with research resources, books, magazines, and newspapers. includes tools for highlighting and bookmarking
14. Sweet Search 4 Me - <http://4me.sweetsearch.com/> . a search engine that only searches sites that have been reviewed as appropriate for K-8 grades



## Free Resources

1. Cool Tech for Teachers - <http://cooltech4teachers.pbworks.com/> . excellent resource for Web 2.0 programs and software for teachers and students
2. Education World Tools & Templates - [http://www.educationworld.com/tools\\_templates/index.shtml](http://www.educationworld.com/tools_templates/index.shtml) . great collection of templates, forms, classroom organizers, calendars, and more
3. FreeTech4Teachers - <http://www.freetech4teachers.com/> . great online resource for Web 2.0 resources and software for teachers and students
4. Free4me - <http://free4me.wikispaces.com/> . online resource full of links to free software and materials for the classroom
5. Free Resources for Educational Excellence - <http://free.ed.gov/> . collection of free resources addressing Arts & Music, Health & Phys Ed, History & Social Studies, Language Arts, Math, and Science. the resources are categorized into Animations, Primary Docs, Photos, and Videos
6. UDL Toolkit - <http://udltechtoolkit.wikispaces.com/> . great resources to support Universal Design for Learning in your classroom

## Printable (don't forget you can print to PDF for digital copies)

1. CSI:Mathematics - <http://www.ceismc.gatech.edu/CSI/homepg.html> . excellent online resources for printable math activities in a variety of grade levels
2. TinSnips - <http://www.tinsnips.org/> . online resources, teaching tools, worksheets, and activities for students with autism spectrum disorders
3. teAchnology - <http://www.teach-nology.com/> . lots of teacher time savers, printable worksheets, games, and downloads
4. ESL Flashcards - <http://bogglesworldesl.com/cards.htm> . printable vocabulary flash cards. note that this site is ad supported
5. Free Online Graph Paper - <http://incompetech.com/graphpaper/> . free online PDFs of various graph papers. includes an online generator so you can create customized graph paper and print it

## Avatars (cool tools to help create online lessons that are engaging)

1. Codebaby - <http://www.codebaby.com/> . create flash-based talking avatars for web pages, elearning modules, and presentations
2. Voki - <http://www.voki.com/> . free and easy web based program for creating talking avatars
3. Xtranormal - <http://www.xtranormal.com/> . great online movie creation software using avatars



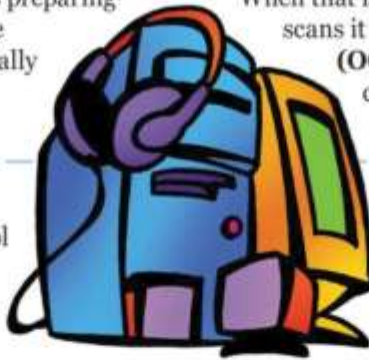


# Universal Access

All students can learn and achieve, but they need tools and technologies so they can use the skills, strategies, and curriculum / information resources they need to be successful. With computers set up for universal access, all students can learn to learn. They learn in their own unique ways through the wide variety of technology tools that enable them to interact with information from digital and printed material. Here are some examples of how universal access tools can help students succeed.

**Carmen** is a bright young woman who speaks English as her second language. She knows the best source of information for the report she is preparing will be found on the World Wide Web. She has trouble reading all the words, but usually understands English when she hears it spoken.

**Carmen** uses **screen-reading software** that translates World Wide Web pages to spoken text. When that isn't available she simply prints the page, scans it using **optical character recognition (OCR) software**, and listens as the computer voice software converts **text to audible speech**.



**Jorge** usually makes a quick trip to the media center on his way home from school to check the SUNLINK catalog and gather what he needs for his assignments. However, Jorge hurt his ankle while surfing last weekend and that quick trip becomes more difficult as he tries to stand in front of the computer, steady himself on his crutches, type, and take notes.

**Jorge** is far more comfortable and productive if he is sitting; he uses a **comfortable chair** and an **adjustable computer table** that can be lowered easily from standing height for other students to a height that can accommodate him while seated.

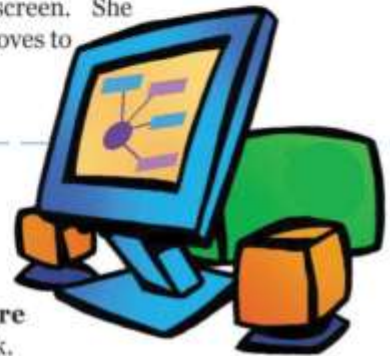
**Cole** does his best in school, but he's a late bloomer. His fingers sometimes just aren't coordinated, and he hits more than one computer key at a time. If only they'd make those keys a little bigger.

**Cole** uses a variety of technology tools to make his work easier. He often uses an **alternative keyboard** with large, touch-sensitive areas instead of keys. Because he has trouble controlling a computer mouse, a large **trackball** provides him with the ability to maneuver through programs.



**Madison** has a hard time writing. She knows what she wants to say, but sometimes has a little trouble coming up with the right word.

**Madison's** written work has been greatly improved by using **word prediction software**. As she begins to type a word several possible choices appear on the screen. She chooses one and moves to the next thought.



**Antonio's** mind tends to wander, but he can stay on task if he has a plan and a visual representation of the process or activity.

**Antonio** uses **cognitive organizers** and **concept mapping software** to keep him on task.

This information was developed by the Florida SUNLINK Project, the UCF ITRC Project, FDLRS/ TECH, FDLRS/TSLL, and the Florida Department of Education.



### Screen Reading Software

Screen reading software “reads” the text on a computer screen out loud, providing students who struggle with reading access to text-based information. Programs that can read computer screens and web pages include:

1. Read & Write Gold - <http://www.texthelp.com>
2. Universal Reader Plus - <http://www.readingmadeez.com>
3. Natural Reader - <http://www.naturalreaders.com/>
4. Built-in text-to-speech on Macintosh computers - <http://www.apple.com/macosx/accessibility/>

### Advanced Screen Readers

Students with significant visual problems may need an advanced screen reader that reads everything on the computer screen, providing an audio interface in place of a visual interface. Examples include:

1. JAWS - <http://www.freedomscientific.com/>
2. Window-Eyes - <http://www.gwmicro.com/>
3. Built-in VoiceOver on the Macintosh - <http://www.apple.com/accessibility/voiceover/>

**Text Scanning Software** (Optical Character Recognition—OCR) Many students struggle with reading and need printed materials converted to a digital format so a computer can then read the text out loud. Software that will convert printed text, such as books, workbooks, and periodicals, include:

1. Kurzweil - <http://www.kurzweilededu.com/>
2. Read & Write Gold - <http://www.texthelp.com>
3. WYNN - <http://www.freedomscientific.com/>
4. Scan and Read Pro - <http://www.readingmadeez.com>
5. OmniPage & OmniForm - <http://www.nuance.com/>

### Alternate Access Keyboards / Mouse Emulators

A typical keyboard and computer mouse will work for many students, but some students may need larger keys, visually enhanced keys, or may need to control the computer with a switch system and an on-screen keyboard. Here are some examples:

1. IntelliKeys - <http://www.intellitools.com>
2. RJ Cooper Trackball - <http://www.rjcooper.com>
3. RJ Cooper Cross Scanner - <http://www.rjcooper.com/>
4. IntelliSwitch & DiscoverPro - <http://www.madentec.com/>

### Writing Support

There are a couple of important writing supports for students. One is auditory feedback: the computer speaks what the student writes. The second is word prediction: the computer offers word suggestions based on rules of grammar and the students' own writing vocabulary.

1. SOLO/Write OutLoud - <http://www.donjohnston.com>
2. Classroom Suite - <http://www.intellitools.com>
3. WordQ 2 - <http://www.wordq.com/wordq2english.html>
4. SOLO/CoWriter - <http://www.donjohnston.com>
5. Read & Write Gold - <http://www.texthelp.com>

### Cognitive Organizers

Some students need help in organizing and processing the information they have access to. Some great software cognitive organizers include:

1. Inspiration & Kidspiration - <http://www.inspiration.com>
2. SOLO/DraftBuilder - <http://www.donjohnston.com>
3. iMindMap - <http://www.imindmap.com/>



# Universal Design for Learning (UDL)

Universal design as used in IDEA is based on the definition found in the Assistive Technology Act of 1998. [Section 3(17)]

"The term 'universal design' means a concept or philosophy for designing and delivering products and services that are usable by people with the widest possible range of functional capabilities, which include products and services that are directly accessible (without requiring assistive technologies) and products and services that are interoperable with assistive technologies."

UDL definition from <http://www.cast.org/index.html>

"Universal Design for Learning (UDL) is a framework for designing curricula that enable all individuals to gain knowledge, skills, and enthusiasm for learning. UDL provides rich supports for learning and reduces barriers to the curriculum while maintaining high achievement standards for all."

## Flexibility in Representation

- options for perception
- options for language and symbols
- options for comprehension

## Flexibility in Expression

- options for physical action
- options for expressive skills/fluency
- options for executive functions (planning/monitoring)

## Flexibility in Engagement

- options for recruiting interest
- options for sustaining effort/persistence
- options for self-regulation

Adapted from the Universal Design for Learning Guidelines v1.0. Download the complete UDL Guidelines Graphic Organizer at [http://www.cast.org/publications/UDLguidelines/UDL\\_Guidelines\\_v1.0-Organizer.pdf](http://www.cast.org/publications/UDLguidelines/UDL_Guidelines_v1.0-Organizer.pdf)

**Universal Design for Learning** provides an excellent framework for curriculum design and technology infusion. Use the following resources to learn more about UDL and how you and your school can use UDL as a guide for technology integration in the classroom.



1. National Center on Universal Design for Learning - <http://www.udlcenter.org/> . new UDL center at CAST
2. UDL Guidelines - <http://www.cast.org/publications/UDLguidelines/version1.html> . guidelines to help in designing flexible curricula.
3. CAST UDL Learning Tools - <http://www.cast.org/learningtools/index.html> . extensive online collection of tools, such as the CAST Science Writer, to support learning

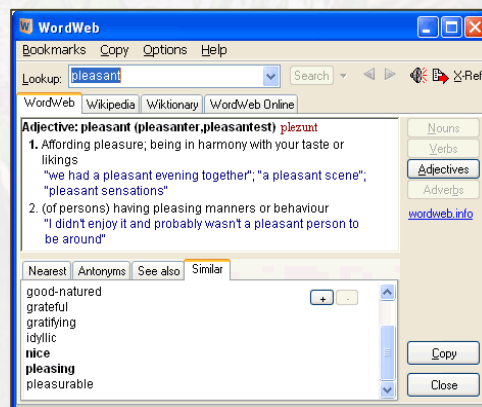


4. Computer Based Study Strategies - <http://cate.uoregon.edu> . excellent resource on strategies that benefit all students
5. UDL Toolkit - <http://udltechtoolkit.wikispaces.com/> . great resources to support Universal Design for Learning in your classroom
6. AT and UDL - <http://teachingeverystudent.blogspot.com> . great collection of information and ideas on teaching every student
7. HIAT - <http://www.montgomeryschoolsmd.org/departments/hiat/websites/> . collection of web resources that can help with creating a universal design for learning environment

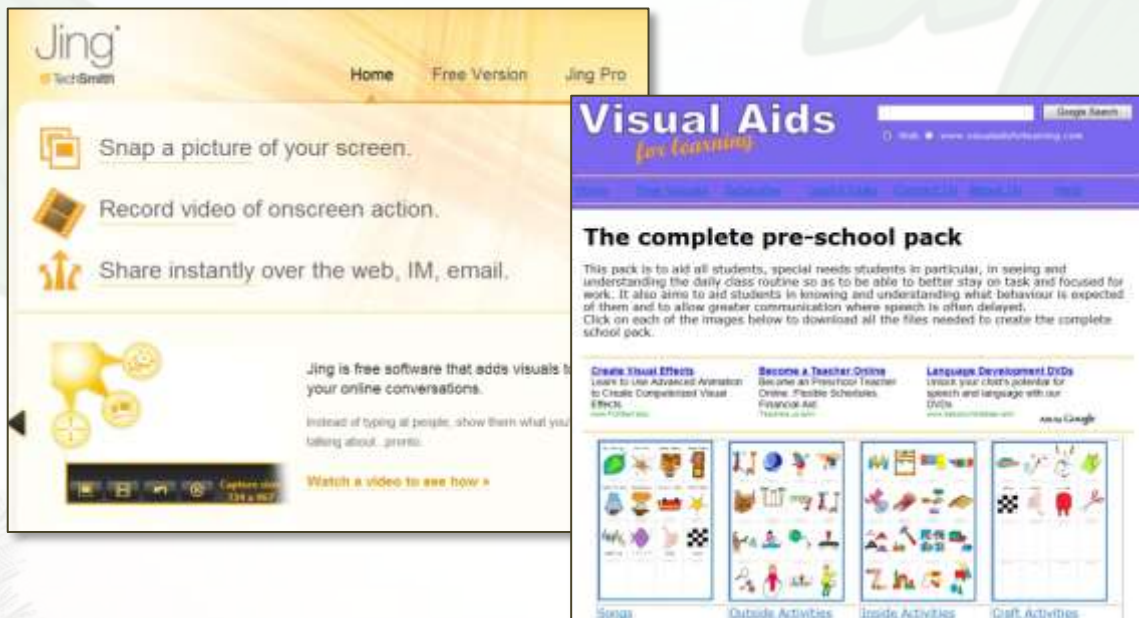
As you read through this booklet you will find a wealth of great ideas and tools to help implement UDL in your classroom. Here are just a few examples.

### Flexibility in Representation Examples & Tools

1. BrainPop - <http://www.brainpop.com/> . animated curriculum-based resources and activities
2. KartOO - <http://www.kartoo.com/> . a visual meta search engine
3. Natural Reader - <http://www.naturalreaders.com> . a free Win text-to-speech utility. add to Adobe Reader and your computer can read PDF files aloud . use with a web browser and the Internet "talks"
4. Glogster EDU - <http://edu.glogster.com/> . online tool for creating multimedia posters with text, photos, videos, graphics, sounds, drawings, and more
5. Visuwords - <http://www.visuwords.com/> . online graphical dictionary that presents words and meanings in a color coded web of information
6. Wordle - <http://www.wordle.net/> . online app for creating "word clouds" from text you paste in or text from a URL that has an RSS feed. you can tweak your clouds with different fonts, layouts, and color schemes
7. WordWeb - <http://wordweb.info/free/> . a free English thesaurus and dictionary that works with most Win programs
8. Rationale (Win) - <http://www.austhink.com> . guided reasoning and argument/debate diagramming software for Windows. requires .net2 which may be on current XP machines
9. Interactive Romeo & Juliet - <http://www.canadianshakespeares.ca/folio/folio.html> . includes multimedia supports as well as a variety of resources and lexicons to help understand the content
10. WatchKnow - <http://www.watchknow.org/> . online videos for kids to learn from
11. Zac Browser - <http://www.zacbrowser.com/> . internet browser specifically designed for children on the autism spectrum







### Flexibility in Expression Examples & Tools

1. Voicethread - <http://voicethread.com/#home> . online tools which enable students to work together on projects using text, voice, pictures, and multimedia.
2. Flip - [http://www.theflip.com/index\\_flip.shtml](http://www.theflip.com/index_flip.shtml) . an inexpensive video camera that is user friendly. it includes built-in software to email videos or publish them online
3. Jing Project (Win . Mac) - <http://www.jingproject.com/> . free screen capture and screen recorder software
4. CamStudio (Win) - <http://camstudio.org/> . free open source screen recording software to record any computer screen activity to an avi file
5. Screenium (Mac) - <http://www.synium.de/products/screenium/index.html> . inexpensive screen and audio recorder for making quality training videos
6. Camtasia (Win) - <http://www.techsmith.com/> . excellent set of screen recording to video tools with extensive choices for final video format
7. Assignment Calculator - <http://www.lib.umn.edu/help/calculator/> . create a time management guide for writing papers
8. Visual Aids for Learning - <http://www.visualaidsforlearning.com/preschool-pack-learning.htm> . visual supports to help students stay on task and focus on learning activities

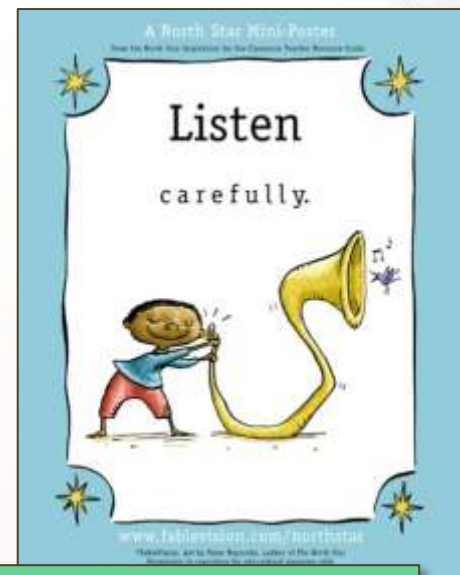
### Flexibility in Engagement Examples & Tools

1. My Hero - <http://www.myhero.com/go/home.asp> . support reading and writing by allowing students to choose their heroes and to contribute information
2. Free Rice - <http://www.freerice.com/> . provides a reason to engage in the activities by donating 10 grains of rice for every correct answer





3. Windows to the Universe - <http://www.windows.ucar.edu/> . content lessons on our planet, solar system, and the universe. each lesson is available in 3 different reading levels and in English or Spanish
4. PowerUp - <http://www.powerupthegame.org/> . free 3D game you can download. students save Planet Helios from ecological devastation. all text chat is pre-set phrase based to prevent any inappropriate communication
5. Kid Tools Support System - <http://kidtools.missouri.edu/> . free performance support software for students (ages 7-13) that assists with self-management, problem solving, making plans, and organizing
6. Aspire (Mac) - <http://www.unifiq.com/aspire/> . broad goal oriented brainstorming and plan review software . includes some interesting tools for visually sorting information by importance
7. BrainCogs (Win . Mac) - [http://www.fablevision.com/braincogs/cog\\_product.html](http://www.fablevision.com/braincogs/cog_product.html) . learning and test taking strategies software for grades 4-8
8. Student Schedule Maker Software - <http://student2.software.informer.com/download-student-schedule-maker/> . large collection of software to help organize and track time and activities
9. Printable Schedule Forms - [http://www.kristensguide.com/Printables/student\\_schedule.asp](http://www.kristensguide.com/Printables/student_schedule.asp) . free student schedule, planner, and assignment forms
10. Using Student Essays to Build Coping Skills - [http://www.educationworld.com/a\\_lesson/lesson/lesson030.shtml](http://www.educationworld.com/a_lesson/lesson/lesson030.shtml) . ideas on helping students build coping skills
11. Wings of EPOH - <http://www.fablevision.com/wingsofepoh/> . story of a young boy with autism who takes a journey with a butterfly named Epoh ("hope" spelled backward) that teaches acceptance, tolerance and empathy. be sure to watch the video at the bottom of the webpage
12. North Star Mini Posters - <http://www.fablevision.com/northstar/miniposters/index.html> . free mini posters to download and use in the classroom, "aimed at encouraging life-long learning, diversity appreciation, creative thinking, positive school communities, and more!"
13. White Noise - <http://www.tmssoft.com/iphone-whitenoise.html> . iPhone app that provides ambient sounds to mask distractions
14. SoundCurtain - <http://itunes.apple.com/us/app/soundcurtain/id306966526?mt=8#> . iPhone and iPod Touch app that creates ambient noise to mask distractions





# Appropriate & Accessible Instructional Materials (AIM)

Accessible instructional materials are instructional materials and print instructional materials that have been formatted or adapted to meet the individual needs of students with disabilities. Appropriate and accessible instructional materials have always been an inherent part of providing students with disabilities a free and appropriate public education (FAPE).

The World Wide Web Consortium (W3C) uses four principles of accessibility to guide their work on accessibility and the internet. While intended for working with the Web, these four principles can also be used as general guides in helping to ensure that all information and instructional materials for students are accessible.



- **Perceivable** - Information and user interface components must be presentable to users in ways they can perceive.
  - This means that users must be able to perceive the information being presented (it can't be invisible to all of their senses)
- **Operable** - User interface components and navigation must be operable.
  - This means that users must be able to operate the interface (the interface cannot require interaction that a user cannot perform)
- **Understandable** - Information and the operation of user interface must be understandable.
  - This means that users must be able to understand the information as well as the operation of the user interface (the content or operation cannot be beyond their understanding)
- **Robust** - Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.
  - This means that users must be able to access the content as technologies advance (as technologies and user agents evolve, the content should remain accessible)

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/intro.html#introduction-fourprincs-head>

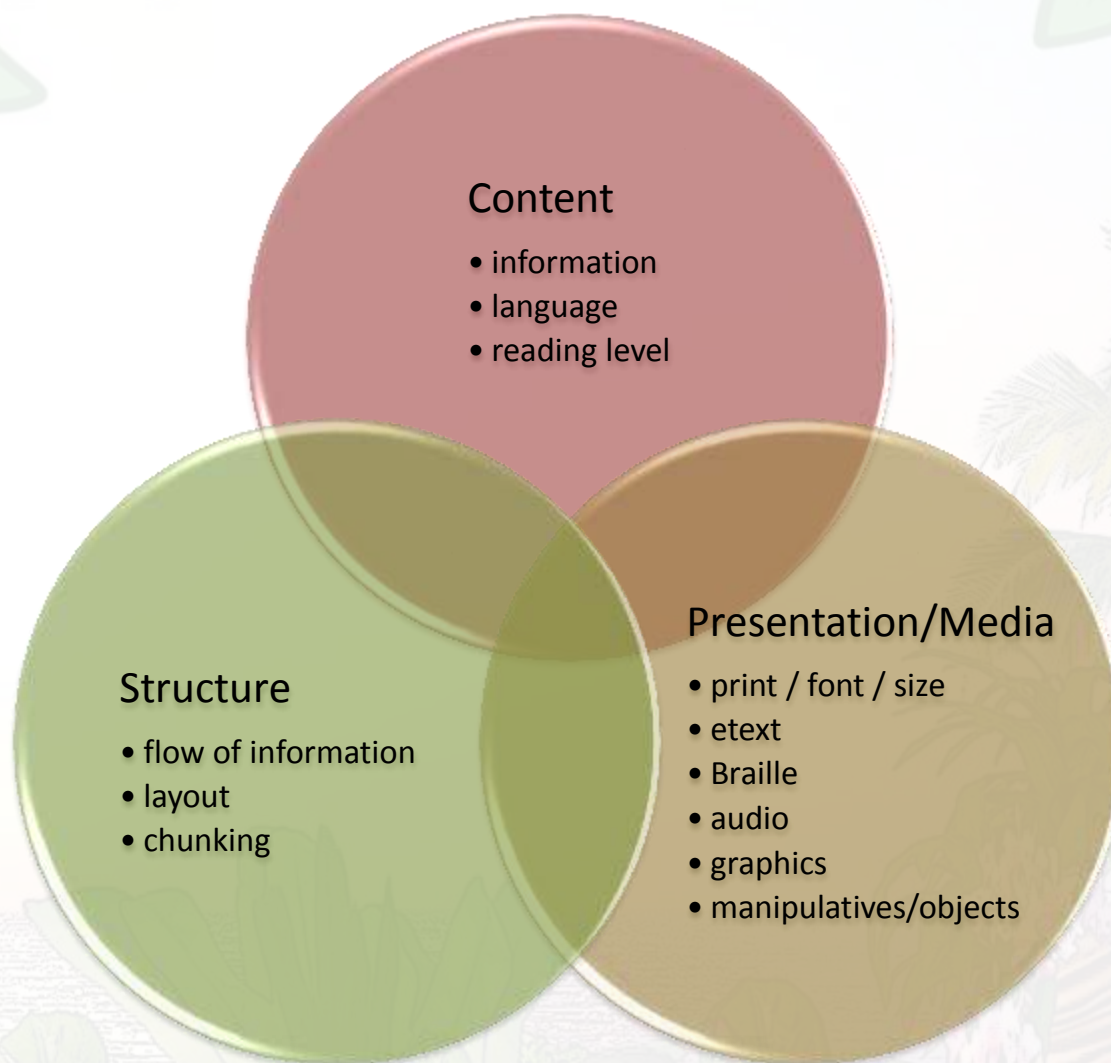
So how do these principles help with determining if instructional materials are accessible for a student? Let's look at some examples.

- *Perceivable* – Students must be able to perceive the materials. If a student is blind or visually impaired then braille, audio, or large print may be needed. If a student is deaf or hard of hearing then audio may need text captions.
- *Operable* – Students must be able to operate the instructional materials. If it is a book, the student must be able to physically handle the book and turn the pages, moving from section to section. If it is a math manipulative the student must be able to handle the object.
- *Understandable* – This addresses both the information (content) and the operation of a user interface. First, the information must be understandable. This could include looking at the reading level of the information, the language, and the structure. Second, the user interface must be accessible. If the instructional materials are digital (e.g. digital books, software, cloud applications), the student must be able to understand the interface or at least the part of the interface needed for the instructional activity.



- **Robust** – Students who use assistive technology must be able to use that technology with the instructional materials if appropriate. A student who uses a switch scanning system to control a computer must be able to use that system to control a digital book or instructional cloud application.

To assist in this process, here are three aspects of instructional materials the IEP team may choose to consider when determining what appropriate and accessible instructional materials are needed for a student.



- **Content:** Are the information, language, and grade level appropriate for this student?
- **Structure:** Is the flow of information appropriate for this student? Some students may be unable to handle large chapters of text successfully and need to work with the information in smaller chunks or in an outline form. This can include adapting the layout of the information.
- **Presentation:** Is the sensory aspect of the format appropriate for this student? Does the student need a larger print, an audio file, Braille, graphic enhanced text, or colored overlays?

Current research in the development of math and science skills emphasizes the importance of math and science manipulatives and the cognitive progression from concrete (manipulatives – all grade levels) to representational (images, virtual manipulatives) to abstract (numbers, formulas). When using these types of instructional materials, attention should be paid to the accessibility needs of students with physical and visual disabilities.



When a student needs to work with concrete items, the accessibility needs should be addressed with those types of items. Moving to virtual manipulatives takes a student out of the concrete stage and is not an acceptable accessibility solution for students who need to succeed at the concrete level. Virtual manipulatives are great once a student has mastered the concrete stage. See the “Math” section for information on concrete and virtual manipulatives and the “Science” section for accessibility information for physical labs as well as information on virtual labs.

### General Resources

1. AIM Technical Assistance Paper – <http://info.fldoe.org/docushare/dsweb/Get/Document-5764/dps-2010-70.pdf>
2. NIMAS Florida Technical Assistance Paper - <http://info.fldoe.org/docushare/dsweb/Get/Document-5424/dps-2009-084.pdf>
3. National Center on Accessible Instructional Materials - <http://aim.cast.org>
4. AIM Navigator - <http://aim.cast.org/experience/training/navigator> . online tool to facilitate the process of decision-making around accessible instructional materials
5. AIM Explorer - <http://aim.cast.org/experience/training/explorer> . free online simulation to help identify what features will make specialized formats accessible for a student
6. AIM Product Tutorials - <http://aim.cast.org/experience/training/tutorials> . web based videos of a variety of products and services to support accessible instructional materials

### Content Resources (adjusting the language and reading level)

1. Fry’s Readability Graph - <http://school.discoveryeducation.com/schrockguide/fry/fry.html> . resources from Kathy Schrock on tools to determine the readability level of a body of text as well as searchable databases on books based on student interest and reading level
2. Readability Calculator - <http://www.standards-schmandards.com/exhibits/rix/index.php> . just paste text to get a reading level
3. Scholastic BookWizard - <http://bookwizard.scholastic.com/tbw/homePage.do> . search engine for scholastic books by interest, reading level, etc.
4. Start-to-Finish Books - <http://www.donjohnston.com/products/start-to-finish/index.html> . middle and high school (5-12) subjects written at the 1.5 to 5.5 grade reading levels. available in printed books, computer-based books, and audio books
5. Sunlink - <http://www.sunlink.ucf.edu/> . search for books in Florida media centers by a variety of filters, including subject, reading level, and language

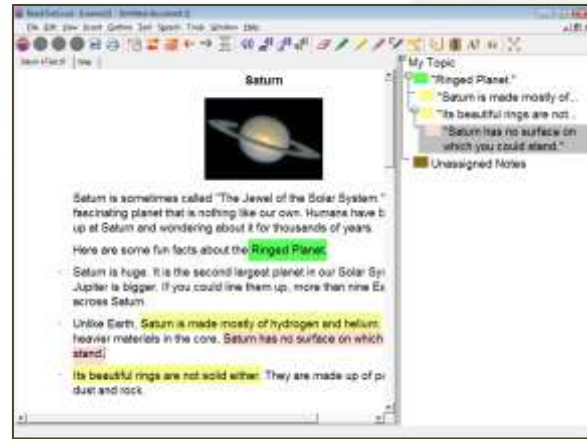


### Structure Resources (adjusting the complexity of the content)

1. WORD AutoSummarize Tool - [http://word.tips.net/Pages/T001809\\_Creating\\_an\\_Executive\\_Summary.html](http://word.tips.net/Pages/T001809_Creating_an_Executive_Summary.html) . Microsoft WORD tool to quickly reduce the amount of text or add visual structure



2. Read:OutLoud - [http://www.donjohnston.com/products/read\\_outloud/index.html](http://www.donjohnston.com/products/read_outloud/index.html) . includes highlighting tools that move the highlighted text to a separate area. works with a wide variety of file formats and includes a built in web browser. additional templates to support restructuring text and reading comprehension are available at: [http://www.donjohnston.com/downloads/rol\\_guides/index.html](http://www.donjohnston.com/downloads/rol_guides/index.html)
3. Read and Write Gold 8.1 - <http://www.texthelp.com/> . a suite of tools that float above open programs, allowing it to be used with web browsers, word processors, pdf files, etc.; features include highlight/extraction and autosummarize tools
4. ReadingMadeEZ Talking Word Processor - <http://www.readingmadeez.com/products/TalkingWordProcessor-Features.html> . includes highlight/extraction tools and autosummarize tools
5. Accessible Books - <http://www.setbc.org/setbc/accessiblebooks/> . early reading material (up to grade 3) that has been put in PowerPoint formats or Clicker formats to increase the accessibility of the books
6. Creating PowerPoint Books - <http://atto.buffalo.edu/registered/Tutorials/talkingBooks/powerpoint.php> . instructions and template for making PPT books
7. PowerTalk - <http://fullmeasure.co.uk/PowerTalk/> . an add-on utility to create talking PowerPoint books and presentations



#### Media Resources (adjusting the presentation)

1. Accessible Book Collection - <http://accessiblebookcollection.org/> . a digital book resource
2. Page by Page Books - <http://www.pagebypagebooks.com/> . classic books online and ready to use
3. Disney Digital Books - <http://disneydigitalbooks.go.com/> . online books with the magic of Disney
4. Lit 2 Go - <http://etc.usf.edu/lit2go/> . collection of literature in mp3 format
5. Florida Electronic Library - <http://www.flelibrary.org/> . digital magazines, newspapers, encyclopedias, and books
6. Learning Through Listening - <http://www.rfbd.org/> . accessible audio book library for qualifying students with disabilities





7. Bookshare.org - <http://www.bookshare.org/web/Welcome.html> - free digital library for all qualifying students in the U.S.
8. Tar Hill Reader - <http://tarheelreader.org/> . collection of free, beginning reader accessible books
9. OmniPage - <http://www.nuance.com/products/index.htm> . OmniPage includes OCR software for scanning printed materials into digital formats as well as scanning printed forms into fill-able digital forms
10. Intel Reader – <http://www.donjohnston.com/intelreader> . high resolution camera that converts printed text to digital text and then reads it aloud
11. Signing Savvy - <http://www.signingsavvy.com/> . similar to the ASL Browser with the additional feature of being able to select large videos (when signed in)
12. ASL eCards - <http://deafresources.com/card/> . send an ecard with ASL
13. Braille and ASL Fonts - <http://www.clickinks.com/Fonts-for-Disabilities-Braille-and-Sign-Language.html> . free downloads of fonts



14. Boardmaker Sign Language Symbols - <http://store.mayer-johnson.com/us/pcs-sign-language-symbols.html> . develop ASL materials with Boardmaker

15. Sign Language & Deafness - [http://www.fsdb.k12.fl.us/rmc/deaf/deaf\\_sign.html](http://www.fsdb.k12.fl.us/rmc/deaf/deaf_sign.html) . extensive collection of activities and resources related to deafness

16. RMTCC Captioning Center - <http://www.fsdb.k12.fl.us/rmc/services/caption.html> . Florida resource for captioned instructional videos

#### Digital Book / Daisy Book Players (digital text/audio books with navigation options)

1. gh Player and example Daisy Books - <http://www.gh-accessibility.com/store/download.php>
2. AMIS Free Reader - <http://www.daisy.org/projects/amis/index.php>
3. EasyReader - <http://www.yourdolphin.com/productdetail.asp?id=9>
4. Victor Readers (Stream, Wave) - [http://www.humanware.com/en-usa/products/blindness/dtb\\_players/compact\\_models](http://www.humanware.com/en-usa/products/blindness/dtb_players/compact_models)
5. Victor Readers Classic - [http://www.humanware.com/en-usa/products/blindness/dtb\\_players/classic\\_models](http://www.humanware.com/en-usa/products/blindness/dtb_players/classic_models)
6. Classmate Reader - <http://www.donjohnston.com/products/portables/classmate/index.html>



IDEA 2004 established the National Instructional Materials Accessibility Standard (**NIMAS**) and requires LEAs to provide accessible materials to students who qualify as being print disabled due to a visual, physical, or organic based reading disability. Through this system core curriculum textbooks are available in specialized formats (Braille, audio, digital etext, large print). For more information in Florida visit NIMAS/Florida at <http://www.fimcvi.org/>

Students with disabilities who do not qualify for NIMAS related services must still be provided accessible instructional materials under IDEA 2004. Options include requesting unlocked, accessible digital textbooks as needed from the current publishers, using scanning technology, and using a digital text library/resource.





# The North Star - FableVision

As a framework for the infusion of technology in the classroom, FableVision materials are similar to Universal Design for Learning (UDL) in that they are both student centric and share a goal of the student as an expert and lifelong learner. The FableVision materials focus on the emotional relevance of the curriculum to each student to help every student find their personal North Star.



## North Star Guide Technology Tool Categories

- Creativity/Expression
- Crafting/Building
- Exploration
- Communication
- Innovation/Problem Solving
- Publishing/Sharing

View the North Star Guide at <http://www.fablevision.com/northstar/techplan/index.html>





## North Star Resources

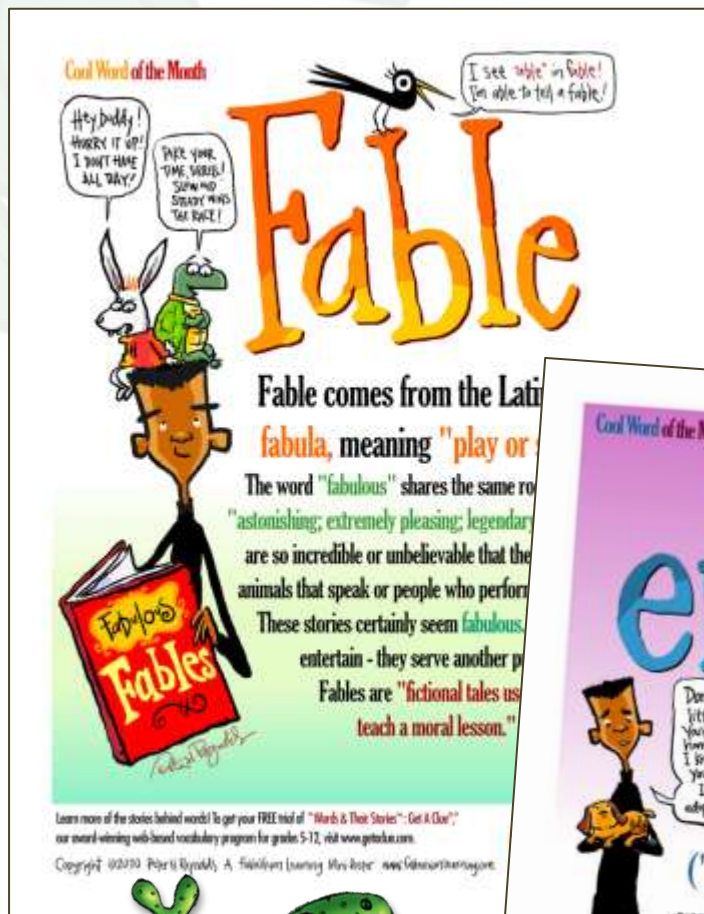
1. The North Star Story - <http://www.fablevision.com/northstar/> . a great online story that affirms the individuality of the journey each student takes. a book version can also be ordered
2. The North Star Overview - <http://www.fablevision.com/northstar/overview/overv.html> . an overview of some of the online resources available at the North Star website
3. The Live Wire Blog - <http://fablevisionlearning.com/blog/> . keep up with news, exchange ideas for the classroom, and view information shared by teachers
4. North Star Mini Posters - <http://www.fablevision.com/northstar/miniposters/index.html> . free mini posters to download and use in the classroom, "aimed at encouraging life-long learning, diversity appreciation, creative thinking, positive school communities, and more!"
5. FableVision Learning - <http://www.fablevision.com/education/> . resources for teachers
6. FableVision Place - <http://www.fablevision.com/place/index.html> . interactive town with games, stories, and fun places to visit
7. FableVision Field Guide - [http://www.fablevision.com/education/telefables/tr\\_fieldguide.html](http://www.fablevision.com/education/telefables/tr_fieldguide.html) . tips for a creative life-long learning adventure
8. SmartMoves (Video DVD) - <http://www.fablevision.com/smartmoves/> . a series of increasingly complicated body movements that function as a kind of calisthenics for the brain



## FableVision Software

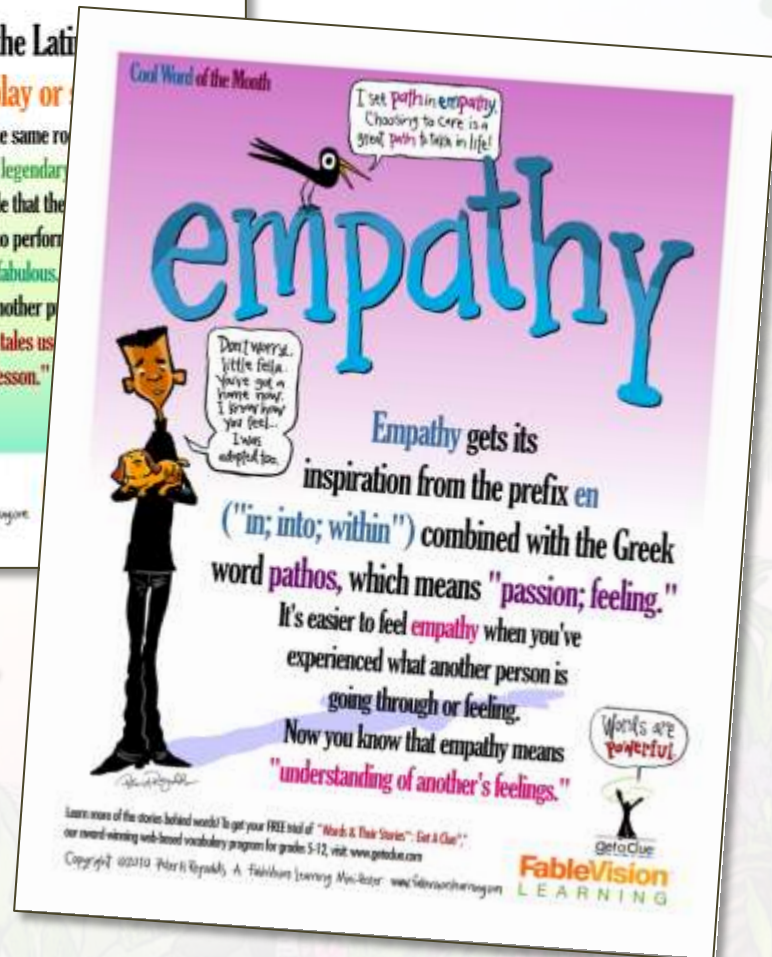
1. Stationery Studio (Win . Mac) - <http://www.fablevision.com/stationerystudio/index.php> . incredible program for creating writing guides and printed materials for grades K-5. download a demo version from the website
2. Essay Express (Win . Mac) - <http://www.fablevision.com/education/products/essayexpress.html> . writing strategy software for grades 4-8
3. BrainCogs (Win . Mac) - [http://www.fablevision.com/braincogs/cog\\_product.html](http://www.fablevision.com/braincogs/cog_product.html) . learning and test taking strategies software for grades 4-8
4. Animation-ish (Win . Mac) - <http://www.fablevision.com/animationish/index.php> . super animation software for students in grades K-up
5. Get a Clue: Words and Their Stories - <http://www.getaclue.com/> . a web-based vocabulary acquisition program based on inductive reasoning. includes a free trial
6. Big Screen Books - <http://www.fablevision.com/bigscreenbooks/> . digital books designed to be used on an interactive whiteboard with support for student interaction
7. Mapping the World by Heart - <http://www.fablevision.com/mappingtheworldbyheart/> . teaches students to think globally and promotes positive student interactions in small groups and as a class





Get free FableVision posters and resources by signing up for their digital newsletter, FableFlash.

[http://visitor.constantcontact.com/manage/optin/ea?v=001\\_9g4yepN7pc4RiDOOXvqig%3D%3D](http://visitor.constantcontact.com/manage/optin/ea?v=001_9g4yepN7pc4RiDOOXvqig%3D%3D)



#### FableVision Books

1. The North Star Classroom Resource Guide - <http://www.fablevision.com/northstar/inspiration.html> . a guide to help make your classroom a place of adventure and excitement
2. The North Star - <http://www.fablevision.com/education/products/thenorthstar.html> . follow a young boy on a journey to find his personal north star
3. The Dot - [http://www.fablevision.com/education/products/dot\\_book.html](http://www.fablevision.com/education/products/dot_book.html) . a fable about the spirit of creativity in all of us
4. Wings of EPOH - <http://www.fablevision.com/wingsofepoh/> . story of a young boy with autism who takes a journey with a butterfly named Epoh ("hope" spelled backward) that teaches acceptance, tolerance and empathy. be sure to watch the video at the bottom of the webpage



# Reading

Start by looking at your state's requirements for reading. The following is for Florida.

1. Florida Reading/Language Arts Standards - <http://www.floridastandards.org/downloads.aspx>
2. FCAT Reading Sample Tests - <http://fcats.fldoe.org/fcatitem.asp>
3. FCAT Released Reading Tests - <http://fcats.fldoe.org/fcatrelease.asp>

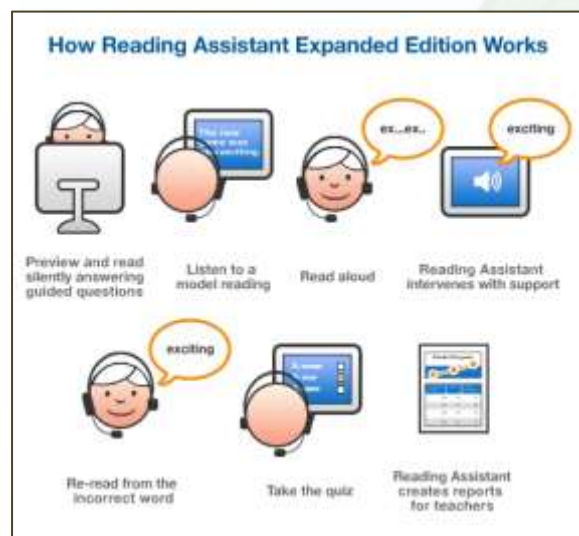
## Reading Activities

1. Reading A-Z - <http://www.readinga-z.com/> . a reading resource center
2. Fast ForWord - <http://www.scilearn.com/products/> . research based reading intervention software with a high degree of success
3. Earobics : Step 1 & 2 (Win . Mac) - <http://www.earobics.com> . intervention software with a focus on auditory perception and phonemes within words
4. The Little Animals Activity Center - <http://www.bbc.co.uk/schools/laac/words/dg3.shtml> . online rhyming game
5. SpellCity - <http://www.spellingcity.com/> . free online tool where teachers and students can enter spelling words and then play a variety of games to reinforce the spelling skills
6. Start-to-Finish Series (Win . Mac) - <http://www.donjohnston.com> . middle and high school subject matter written at the 1.5 to 5.5 grade level. available in printed, computer-based, and auditory formats
7. ClozePro (Win . Mac) - <http://www.cricksoft.com> . create fill-in-the-gap activities with visual and auditory supports
8. Apples 4 the Teacher - <http://www.apples4theteacher.com/> . free online classroom (up to grade 6) activities in a variety of curriculum areas
9. Interactives - <http://www.learner.org/interactives/> . provides educators and students with strategies, content, and activities that can enhance and improve students' skills in a variety of curricular areas
10. Phonics Companion & Vocabulary Companion - <http://www.teamvistech.com/> . create customized printable phonics and vocabulary worksheets
11. Literactive - <http://www.literactive.com/Home/index.asp> . free online reading support materials for pre-school, kindergarten, and grade 1. a registration is required for use
12. LEaRN - <http://learn.nefec.org/> . literacy essentials and reading network
13. Read . Write . Think - <http://www.readwritethink.org/> . online resource of highly interactive lessons and engaging student materials from the international reading association





14. Simon Sounds It Out (S.I.O.) (Win . Mac) - <http://www.donjohnston.com> . focuses on letter sounds and word families. includes switch access and keyboard control. usable with alternative keyboards
15. WordMaker (Win . Mac) - <http://www.donjohnston.com> . focuses on word attach and spelling skills. includes switch access and keyboard control. usable with alternative keyboards
16. Reading Assistant (Win . Mac) - <http://www.scilearn.com/products/index.php> . students can hear stories read aloud or get feedback as they read the stories aloud
17. Classroom Suite (Win . Mac) - <http://www.intellitools.com> . preK through 5 reading, writing, and math tools
18. Thinking Reader (Win . Mac) - <http://www.tomsnyder.com> . 7 to 8 grade literature titles with text-to-speech and embedded reading strategy supports
19. WordMenu (Win . Mac) - <http://www.wordmenu.com/> . a text-based visual organization of words by subject matter
20. Utah Education Network - <http://www.uen.org/k12student/> . extensive collection of resources in a variety of curriculum areas. be sure to look on the right side of the page for the "Student Interactives" for grades K-2, 3-6, and 7-12.
21. The Literacy Project - <http://www.google.com/literacy/> . a resource for teachers and literacy organizations. includes articles, videos, links to blogs, and other resources

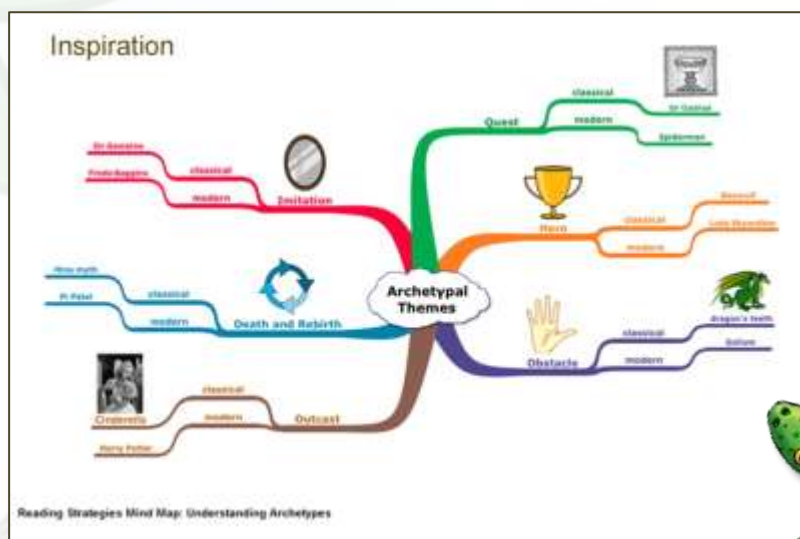


### Online Books & Reading Support

1. StarFall - <http://www.starfall.com/> . the ABC's of getting ready to read. extensive materials and resources for early literacy development
2. BookBox - <http://www.bookbox.com/> . inexpensive digital books in a wide variety of languages. many of the books can be read in one language with subtitles in a different language
3. UDL Editions by CAST - <http://udleditions.cast.org/> . online books with flexible supports for ages 10 up
4. Accessible Book Collection - <http://accessiblebookcollection.org/> . a digital book resource
5. Page by Page Books - <http://www.pagebypagebooks.com/> . classic books online that are ready to use



- Lit 2 Go - <http://etc.usf.edu/lit2go/> . collection of literature in mp3 format
- Florida Electronic Library - <http://www.flelibrary.org/> . digital magazines, newspapers, encyclopedias, and books



### Graphic Organizers / Cognitive Support

- Graphic Organizers - <http://www.teachervision.fen.com/graphic-organizers/printable/6293.html?s2> . free online source of printable graphic organizers in a wide variety of cognitive supports
- Kidspiration & Inspiration (Win . Mac) - <http://www.inspiration.com> . graphic organizers with templates to support reading comprehension
- Read:OutLoud (Win . Mac) - [http://www.donjohnston.com/resources/readoutloud\\_index.html](http://www.donjohnston.com/resources/readoutloud_index.html) . digital text tools with extensive reading strategies/guides and cognitive supports for fiction and non fiction
- Active Reading Strategies - [http://www.savvyknowledge.com/products/great\\_teacher/greatteacher.html](http://www.savvyknowledge.com/products/great_teacher/greatteacher.html) . excellent resource of strategies for students to use to visually organize text .

### Digital Text (scaffolding tools for struggling readers)

- Natural Reader (Win) - [www.naturalreaders.com](http://www.naturalreaders.com) . a free text-to-speech utility. add to Adobe Reader and your computer can read PDF files aloud . use with a web browser and the Internet "talks"
- Read and Write Gold (Win . Mac) - <http://www.texthelp.com> . suite of software tools that are available in most programs being used on a computer. includes scanning printed text, reading and writing supports, and study tools
- Kurzweil 3000 (Win . Mac) - <http://www.kurzweilededu.com> . software designed for scanning printed text to digital formats. includes reading, writing, and study supports
- Wynn (Win) - <http://www.freedomscientific.com/LSG/products/WYNN.asp> . software designed for scanning printed text to digital formats. includes reading, writing, and study supports
- Scan and Read Pro (Win) - <http://www.readingmadeez.com/products/scanreadpro.html> . software designed for scanning printed text to digital formats





# Demonstrating Reading Comprehension



Students who struggle with demonstrating reading comprehension, including students with specific learning disabilities, often exhibit individual strengths and weaknesses in a variety of cognitive processes. Some of these weaknesses deal with internally processing information in ways that support higher order thinking skills. Some of these weaknesses deal with being able to express or demonstrate what is understood. The following are some areas to consider.

Taken from the NICHY Reading & Learning Disabilities Briefing Paper:

<http://www.nichcy.org/informationresources/documents/nichcy%20pubs/fs17.pdf>

<http://www.nichcy.org>

**Input** – the process of recording information from the senses in the brain



- **Visual perception problems:** could include differentiating foreground and background, impact of colors
- **Difficulties with size, shape, and placement:** could include letter reversals/rotations, skipping words/lines of text, rereading the same text
- **Auditory perception problems:** may confuse subtle differences in sounds and confuse words and phrases that sound alike

**Integration** – the process of interpreting information



- **Sequencing:** may recount a story by starting in the middle, may reverse the order of letters in a word, may change the order of words in a phrase, may have problems with the order of any sequence of individual units/bits of information
- **Abstraction:** may have problems inferring meaning, problems generalizing information from a story or article, problems understanding jokes, puns, or idioms
- **Organization:** may have problems moving from related bits of information to a coherent concept, may have problems processing facts to answer general questions

**Memory** – the process of mentally storing/recording information for later retrieval



- **Short-term memory:** can include difficulty maintaining initial memory long enough to move the information into long-term memory
- **Long-term memory:** long-term memory may be easily “depressed” or weakened through processing new related memories (see section on long-term potentiation and long-term depression)

**Output** – the process of expressive (and written) language



- **Spontaneous language:** self-selected topics generally demonstrate those subjects/topics the student has organized their thoughts around and selected the appropriate words to use; often resulting in a coherent conversation or report but not on assigned topics or relevant curricular information
- **Demand language:** when a student is faced with an assignment or requirement to discuss or write on a topic that is not already internally organized they may pause, ask for clarification or more information, give confusing responses or answers, or have problems finding the right words to use



Instructional strategies can sometimes become an accommodation or assistive technology for students. If a student requires an instructional strategy, such as advanced organizers, and eventually becomes successful without that strategy then the student has internalized the process. But if a student always requires a particular strategy, such as an advanced organizer, to be successful then that strategy has become an accommodation. If this is the case then it is important to teach the student how to become independent in using that accommodation, for example, teaching the student strategies and tools to visually mark or highlight portions of text, create concept maps, develop conversation guides, etc.

Study Guides Strategies - <http://www.studygs.net/> . extensive collection of study and learning strategies



#### **Input Accommodations / Strategies**

- Text adjustment (alter font, font size, serif vs. sans serif, spacing between words, spacing between lines)
- Color coding (adjust background/foreground colors, use color overlays)
- Visually marking/highlighting sections of text
- Reading Guides
- Alternative media (text-to-speech, graphic clues)
- Audio files EQ'd for clarity



#### **Integration Accommodations / Strategies**

- Graphic Organizers (including advanced organizers)
- Concept Maps / Mind Maps
- Timelines
- Outlines
- Illustrations
- Plays / Comics / Role Play



#### **Memory Accommodations / Strategies**

- Journals
- Illustrations / Graphics / Audio
- Image Albums
- Repeated Processing Activities
- Simulations / Interactive media



#### **Output Accommodations / Strategies**

- Graphic Organizers
- Guided Discussion
- Report/Conversation Guides
- Extended Time
- Plays / Comics / Role Play



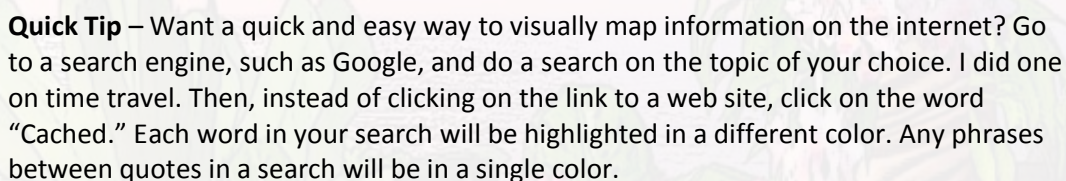


Visually mapping information is a scaffolding technique that supports pattern recognition, information organization, and memory. Tools found in programs like WORD and Adobe Reader include highlighters, comments, stamps, and adjusting font attributes. The Find/Replace tool in WORD is useful for finding all occurrences of a word or phrase and highlighting it. Also look at the Auto Summarize tool in Microsoft WORD and the Talking Word Processor; great for making quick summaries.

ACID	Preview	Purpose	Relate to Self	Relate to Senses
Mark text by: <ul style="list-style-type: none"> <li>• Agree</li> <li>• Confusing</li> <li>• Interesting</li> <li>• Disagree</li> </ul>	Mark text by: <ul style="list-style-type: none"> <li>• Titles</li> <li>• Sub-titles</li> <li>• Repeated words</li> <li>• First &amp; last paragraph</li> </ul>	Mark text by: <ul style="list-style-type: none"> <li>• Word occurrence</li> <li>• Adjectives</li> <li>• Sequence</li> <li>• Compare / contrast</li> </ul>	Mark text that relates to personal memories: <ul style="list-style-type: none"> <li>• Past experience</li> <li>• Books, pictures, video</li> <li>• Events, people, issues</li> </ul>	Mark text that relates to personal memories: <ul style="list-style-type: none"> <li>• I can taste . . .</li> <li>• I can hear . . .</li> <li>• I can visualize . . .</li> </ul>

Active Reading Strategies: <http://www.savvyknowledge.com/> . excellent product with comprehensive instructions on a wide variety of reading strategies. includes a CD and well written manual. they also have products addressing study strategies and classroom behavior.

<http://printables.scholastic.com/printables/search/?query=reading%20comprehension%20strategies> . great collection of printable reading strategies

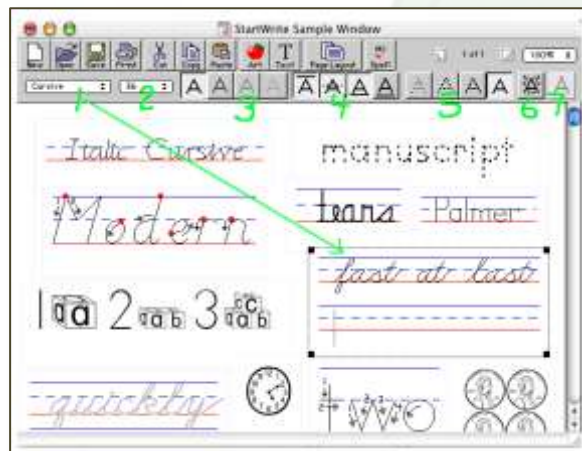




# Writing & Publishing

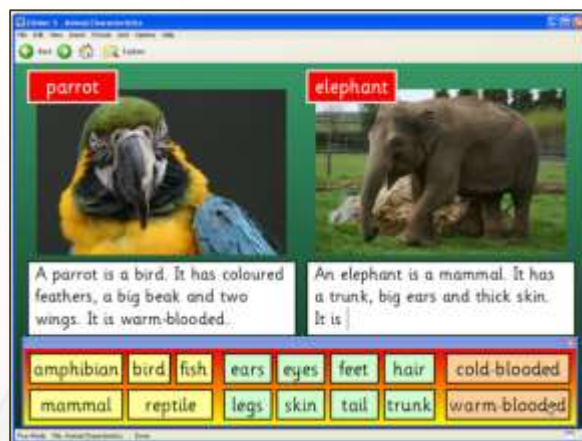
## Handwriting Tools

1. Pencil Grips - <http://www.otideas.com/Items/PencilGrips.htm>
2. LoTTIE Kits - <http://www.onionmountaintech.com/> . simple technology for reading, writing, and math
3. StartWrite (Win . Mac) - <http://www.drawyourworld.com/strtwrt.html> . inexpensive program for creating a variety of visually lined papers and writing guides. excellent program
4. Stationery Studio (Win . Mac) - <http://www.fablevision.com/stationerystudio/index.php> . software for creating a variety of visually lined papers and writing guides. includes an extensive graphics library. highly engaging
5. Free Online Graph Paper - <http://incompetech.com/graphpaper/> . free online PDFs of various graph papers. includes online generators so you can create customized graph papers and print them out



## Graphic Enhanced Writing

1. Clicker 5 (Win . Mac) - <http://www.cricksoft.com/uk/products/clicker/> . write with words, phrases, or pictures. correlates pictures to words and includes text-to-speech
2. PixWriter (Win . Mac) - <http://www.slatersoftware.com/pixwriter.html> . write with words, phrases, or pictures. correlates pictures to words and includes text-to-speech
3. Picture It (Win . Mac) - <http://www.slatersoftware.com/pit.html> . automatic picture-word matching software
4. Classroom Suite (Win . Mac) - <http://www.intellitools.com> . write with words, phrases, or pictures
5. Communicate: In Print 2 (Win) - <http://www.widgit.com/products/inprint/index.htm> . a symbol-based desk top publishing program

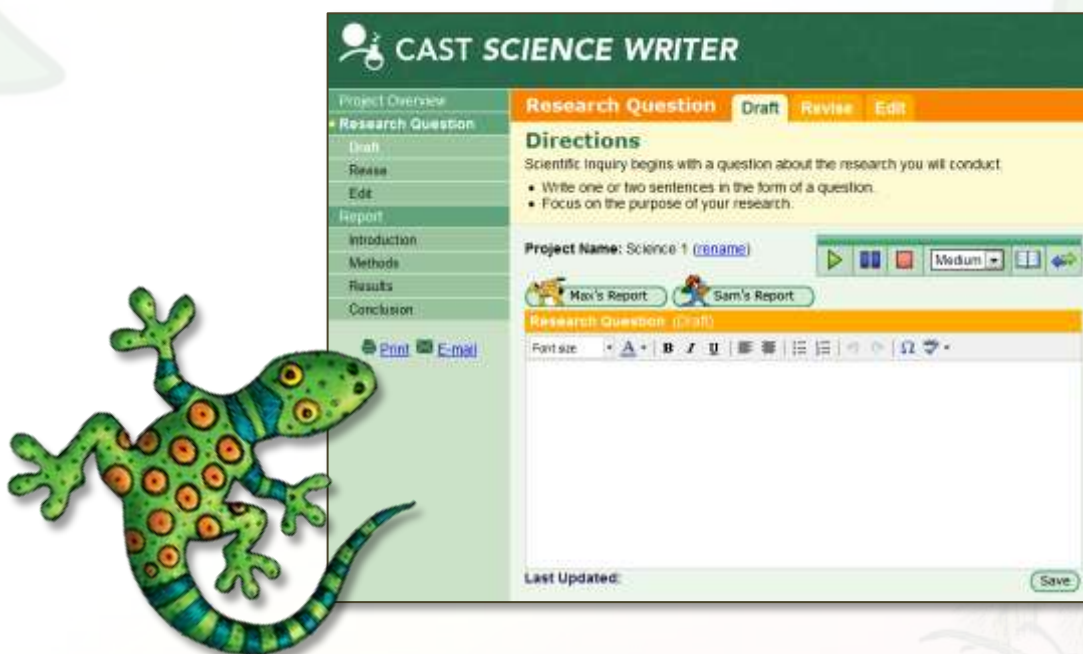


## Writing Tools & Scaffolding

1. SOLO (Win . Mac) - <http://www.donjohnston.com/products/solo/> . literacy and writing support with text readers, information organization tools, and word processing
2. Write Online - <http://www.cricksoft.com/us/writeonline/> . online writing software with text-to-speech, word prediction, vocabulary wordbars, and document analysis tools
3. Classroom Suite (Win. Mac) - <http://www.intellitools.com> . provides word prediction, speech feedback, and extensive writing support tools
4. Co:Writer (Win. Mac) - <http://www.donjohnston.com/products/cowriter/index.html> . adds quality linguistic word prediction to any software program or word processor a student is using. use with a talking word processor to get full audio feedback

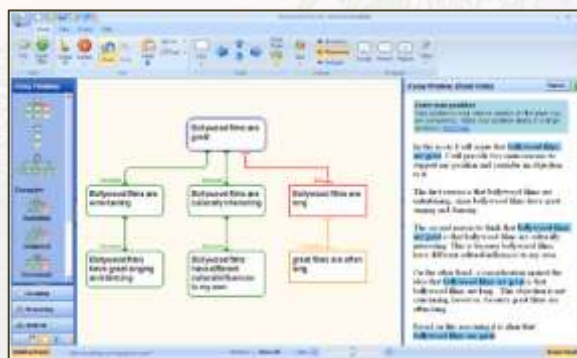


5. WordQ (Win) - <http://www.wordq.com/> . provides word prediction and text-to-speech to any writing software program. the company also has a plug-in called SpeakQ for voice-to-text
6. Writing Roadmap - [http://www2.ctb.com/products\\_services/wrm/index.html](http://www2.ctb.com/products_services/wrm/index.html) . affordable online writing and assessment tool that provides instant scoring functions
7. Science Writer - <http://sciencewriter.cast.org> . great online tool that supports students in writing lab and class science reports
8. Ginger Software - <http://www.gingersoftware.com/> . writing assistance software with a premium version that adds text-to-speech



### Writing Organizers

1. Graphic Organizers - <http://www.teachervision.fen.com/graphic-organizers/printable/6293.html?s2> . free online source of printable graphic organizers in a wide variety of cognitive supports
2. Inspiration (Win . Mac) & Kidspiration (Win . Mac) - <http://www.inspiration.com> . commercial concept mapping with extensive image libraries and writing support tools
3. Rationale (Win) - <http://www.austhink.com> . guided reasoning and argument thinking diagramming software for Windows. requires .net2 which may be on current XP machines
4. Online Thinking Tools - <http://www.intel.com/education/tools/> . includes online tools for visual ranking, seeing the relationships in complex systems, and constructing well-reasoned arguments



### Research Support Tools

1. Find Out & Write About (Win . Mac) - <http://www.cricksoft.com/us/products/clicker/fowa/default.aspx> . topic based activities to help students learn to review information and then write about it
2. Assignment Calculator - <http://www.lib.umn.edu/help/calculator/> . create a time management guide for writing papers



3. SOLO (Win . Mac) - <http://www.donjohnston.com/products/solo/> . literacy and writing support with text readers, information organization tools, and word processing
4. Thematic Pathfinders - <http://42explore.com/> . great starting point for students to search for information on themes and topics
5. My Hero - <http://www.myhero.com/go/home.asp> . support reading and writing by allowing students to choose their heroes and to contribute information
6. TekMom - <http://www.tekmom.com/search/> - one page resource of multiple search tools for students
7. Big 6 Research Model Handout - <http://www.big6.com/files/Big6Handouts.pdf> . from Michael B. Eisenberg and Robert E. Berkowitz at <http://www.big6.com>
8. Shmoop - <http://www.shmoop.com/> . study guides, writing guides, and literacy analysis tools
9. WebNotes - <http://www.webnotes.net/> . share websites and organize research material
10. Diigo Education - <http://www.diigo.com/education> . online highlighting and sticky note service
11. WordWeb - <http://wordweb.info/free/> . a free English thesaurus and dictionary that works with most Win programs
12. Son of Citation Machine - <http://citationmachine.net/> . online tool for creating standard bibliographic and in-text citations
13. MyPublisher - <http://www.mypublisher.com/> . create your own books with photos
14. Scribd - <http://www.scribd.com/> . online publishing store & service



### Publishing (Paper – Web)

1. Stapleless Books - [http://www.readwritethink.org/student\\_mat/student\\_material.asp?id=10](http://www.readwritethink.org/student_mat/student_material.asp?id=10) . online tool for children to create simple stapleless books
2. Pocket Mod - <http://www.pocketmod.com/> . more ideas for stapleless books
3. ClickBook (Win) - <http://www.bluesquirrel.com/products/clickbook/> . utility that paginates writing done in just about any software program so it can be printed as a book or booklet
4. flickr toys - <http://bighugelabs.com/flickr/> . amazing online publishing tools with flickr integration
5. LetterPop - <http://www.letterpop.com/> . free online service for creating beautiful newsletters and flyers
6. Blogger - <https://www.blogger.com/start> . free blogging service that includes posting by email. a great way for students to turn in writing assignments electronically or share writing with others
7. Wikispaces - <http://www.wikispaces.com/> . free wiki service with online collaborative tools
8. PBWorks - <http://pbworks.com> . wiki and collaboration tools and services
9. PodBean - <http://www.podbean.com/> . free service for podcasting and vodcasting
10. VoiceThread - <http://voicethread.com/#home> . students can publish online with text, audio, or video





# Math

Start by looking at your state's grade level expectations in math skills. The following are for Florida.

1. Florida Standards in Math - <http://www.floridastandards.org/downloads.aspx>
2. FCAT Math Sample Tests - <http://fcats.fldoe.org/fcatitem.asp>
3. FCAT Released Math Tests - <http://fcats.fldoe.org/fcatrelease.asp>

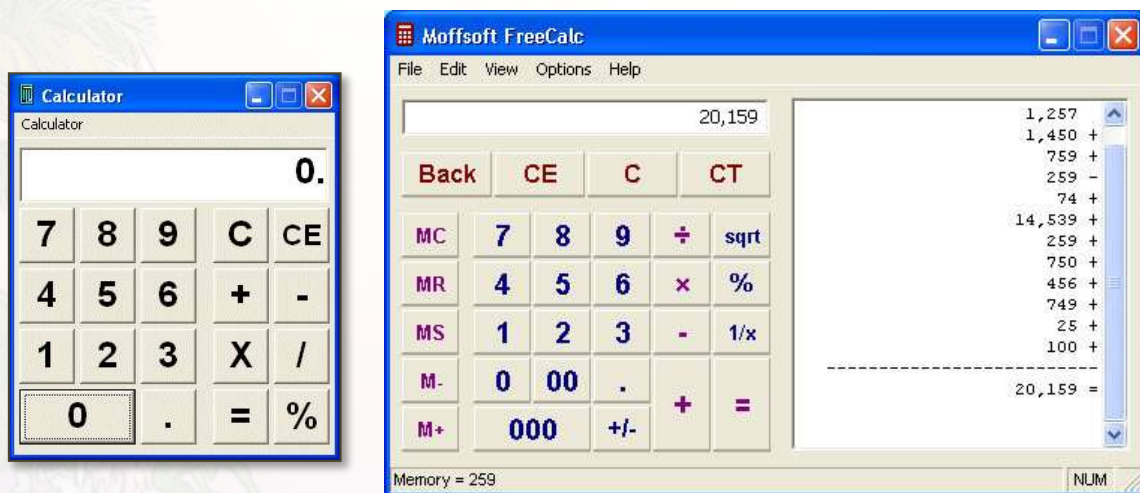
## Math Basics

1. Equals from AbleNet - <http://www.ablenetinc.com/Home/Equals/tabid/460/Default.aspx> . a Pre K-12 curriculum for students with significant cognitive disabilities. provides a multi-sensory structure to math with three levels of instructional strategies for each lesson
2. Enchanted Learning Math - <http://www.enchantedlearning.com/math/> . extensive resource for printable early learning math activities
3. PoissonRouge (Red Fish) - <http://www.poissonrouge.com/> . early learning math activities
4. Math Manipulatives - [http://www.ct4me.net/math\\_manipulatives.htm](http://www.ct4me.net/math_manipulatives.htm) . extensive collection of information on using manipulatives and virtual manipulatives to support math as well as links to usable tools
5. Visual Math Materials - <http://www.mathlearningcenter.org/curriculum/highschool/overview.asp> . books on using math manipulatives for algebra in middle and high school
6. LoTTIE Kit for Math - <http://www.onionmountaintech.com/kit.php?id=15> . simple technology support for math
7. Classroom Suite (IntelliMathics) – <http://www.intellitools.com> . includes animation, manipulatives, text-to-speech, and multimedia to demonstrate basic math concepts with multiple access options
8. FASTT Math – <http://www.tomsnyder.com> . software that targets the development of fluency in addition, subtraction, multiplication, and division
9. Go Solve – <http://www.tomsnyder.com> . uses graphic organizers to help students plan for solving word problems in addition, subtraction, multiplication, and division
10. Fraction Nation - <http://www.tomsnyder.com/FractionNation/index.asp> . supports the development of conceptual understanding and procedural knowledge to increase fraction and decimal fluency
11. Conceptua Math - <http://www.conceptuamath.com/index.html> . addresses fractions from grades 2-7 with a full-featured set of practice and remediation activities
12. Algebra Support Tools - <http://algebrasupporttools.wikispaces.com/> . correlation of a variety of online math tools to algebraic concepts and activities





13. CSI:Mathematics - <http://www.ceismc.gatech.edu/CSI/homepg.html> . excellent online resources for printable math activities in a variety of grade levels
14. Hooda Math - <http://hoodamath.com/> . collection of math games, tutorials, worksheets, and movies
15. Math TV - <http://mathtv.com/> . online math instruction videos
16. Apples 4 the Teacher - <http://www.apples4theteacher.com/> . free online classroom (up to grade 6) activities in a variety of curriculum areas
17. Interactives - <http://www.learner.org/interactives/> . provides educators and students with strategies, content, and activities
18. Brainchild - <http://www.brainchild.com/> . math assessment and learning tools
19. Math Hunt - <http://teacher.scholastic.com/mathhunt/index.asp> . free online collection of cross curricular math activities grades 5-8; teacher's guide included
20. That Quiz - <http://www.thatquiz.org/> . online math assessment service
21. Utah Education Network - <http://www.uen.org/k12student/> . extensive collection of resources in a variety of curriculum areas. be sure to look on the right side of the page for the "Student Interactives" for grades K-2, 3-6, and 7-12.
22. DimensionM - <http://www.dimensionu.com/math/> . immersive 3D math games where K-12 students compete and collaborate with other players



### Calculators

1. Big Calculator (Win) - <http://www.sensorysoftware.com/bigcalculator.html> . a free basic calculator that can be adjusted for really big buttons
2. Metacalc - <http://www.metacalc.com/> . free online calculator in various sizes
3. ecalc - <http://www.ecalc.com/> . free online calculator with basic, scientific, and unit conversion modes
4. KoalaCalc (Mac) - <http://www.macropodsoftware.com/koalacalc/index.html> . free simple and scientific mode calculator
5. MoffSoft FreeCalc (Win) - <http://www.moffsoft.com/freecalc.htm> . a great basic calculator with adjustable size and color schemes, and a simulated paper tape display
6. Online Calculators and Algebra Tools - [http://go.hrw.com/hrw.nd/gohrw\\_rls1/pKeywordResults?keyword=Mb1+Tools](http://go.hrw.com/hrw.nd/gohrw_rls1/pKeywordResults?keyword=Mb1+Tools) . several algebra support tools

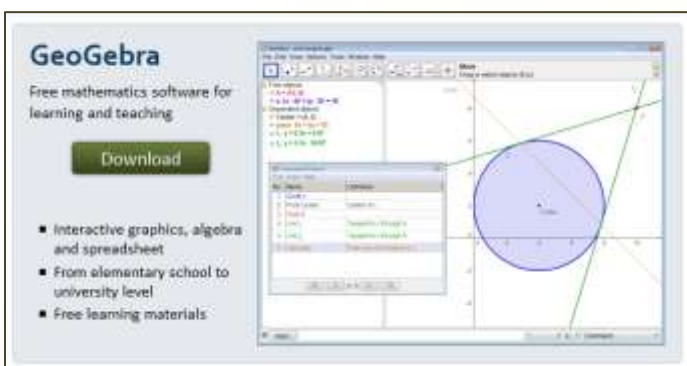


7. Calculate for Free - <http://www.calculateforfree.com/> . extensive set of various calculation tools
8. Broken Calculator – <http://seeingmath.concord.org/broken-calculator> . online simulation of a broken calculator. Students must think through how to solve problems using the keys available



### Virtual Manipulatives/Simulations

1. InspireData – <http://www.inspiration.com> . applies proven strategies of visual learning to data literacy
2. Visual Fractions - <http://www.visualfractions.com/> . includes online tools for learning fractions
3. NLVM – <http://nlvm.usu.edu/en/nav/vlibrary.html> . collection of online manipulatives and visualizations for all grade levels
4. ConceptuaMath Fraction Tools - <http://conceptuamath.appspot.com/fractions.html> . free online collection of tools designed for teacher-facilitated whole class instruction
5. Explore Learning – <http://www.explorelearning.com> . extensive online set of mathematic simulations and visualizations
6. SELECT Math - <http://boston.k12.ma.us/teach/technology/select/index.html> . aligns virtual manipulatives and visualizations with standards

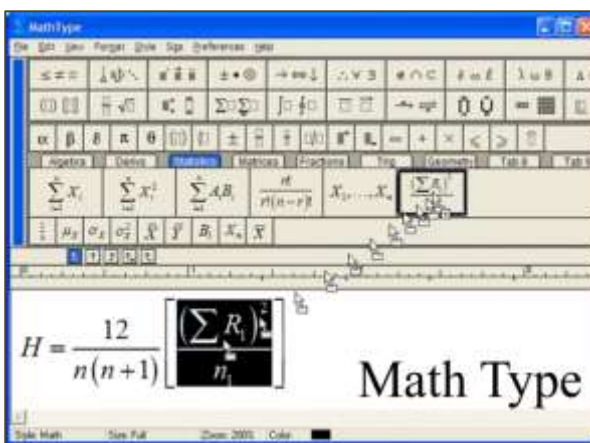
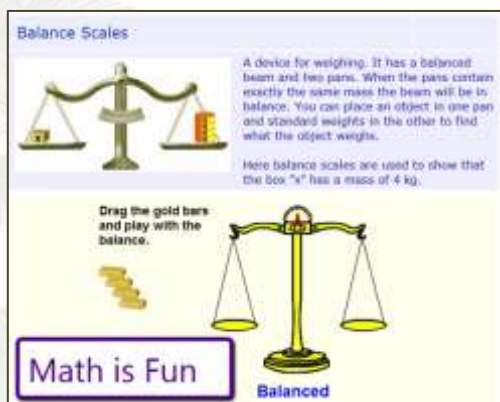


7. GeoGebra - <http://www.geogebra.org/cms/> . virtual tools for geometry, algebra, and calculus
8. Geometer's Sketchpad - <http://www.dynamicgeometry.com/> . updated sketchpad with expanded geometry and algebra features
9. Eduscapes - <http://eduscapes.com/sessions/smartboard> . includes links to a variety of simulations and visualizations
10. Illuminations - <http://illuminations.nctm.org/> . a collection of online, standard-based virtual manipulatives and lessons
11. Scratch - <http://scratch.mit.edu/> . friendly programming software that students can use to create games and interactive activities
12. Interactive Logo the Turtle - <http://www.mathsnet.net/logo/turtlelogo/index.html> . a free online logo applet. requires java to run
13. Virtual Geoboard - <http://illuminations.nctm.org/LessonDetail.aspx?ID=L554>
14. Virtual Ruler - <http://www.desktopruler.com/products-dr.htm>
15. Virtual Protractor - <http://www.downloadjunction.com/product/store/15482/index.html>



## Homework Helpers

1. Free Online Graph Paper - <http://incompetech.com/graphpaper/> . free online PDFs of various graph papers. includes an online generator so you can create customized graph paper and print it
2. Math is Fun - <http://www.mathsisfun.com/definitions/index.html> . illustrated math dictionary
3. Math TV - <http://mathtv.com/> . online math instruction videos
4. WebMath - <http://www.webmath.com/> . online tool that helps students solve math problems from general math through calculus
5. Mathway - <http://www.mathway.com/> . online tool that helps students solve math problems
6. WebGraphing - <http://www.webgraphing.com/> . online equation-graphing environment, from simple to advanced calculations
7. Algebra Help – <http://www.algebrahelp.com/calculators> . algebra support tool
8. Conversion Tools – <http://www.convertit.com> . basic online collection of conversion tools
9. Equation Wizard (Win) - <http://www.equationwizard.com/> . algebraic equation problem solver software. trial version good for 30 equations
10. Microsoft Math - <http://www.microsoft.com/math/default.msp> . an all-in-one math homework solution. solve equations, graph functions, use a fully-functional graphing calculator, solve triangles, and convert standard units



## Accessibility Support

1. MathPad & MathPad Plus - <http://www.intellitools.com/> . support for doing arithmetic directly on a computer
2. Scientific Notebook - <http://www.mackichan.com/> . math writing environment for the computer
3. MathTalk - <http://www.metroplexvoice.com/> . speech-to-math processor. requires Naturally Speaking
4. MathType - <http://www.dessci.com/en/products/mathtype/> . full featured equation editor
5. Microsoft Office Equation Editor 2007 - [http://blogs.msdn.com/microsoft\\_office\\_word/archive/2006/10/04/Equations-in-Word-2007.aspx](http://blogs.msdn.com/microsoft_office_word/archive/2006/10/04/Equations-in-Word-2007.aspx) . includes video examples of how to use the new equation editor in WORD 2007
6. Microsoft Equation Editor: Creating a Quick Access Toolbar button - <http://www.dessci.com/en/support/mathtype/tsn/tsn124.htm> . instructions on how to create a button to quickly open the Equation Editor in Microsoft Office 2007. it should also work in 2010
7. OpenOffice Math - <http://www.openoffice.org/product/math.html> . free component in OpenOffice for creating equations
8. MathTrax - <http://prime.jsc.nasa.gov/mathtrax/index.html> . An online graphing tool from NASA for middle and high school students. it works with screen readers. there are two modes, visual MathTrax and Text MathTrax



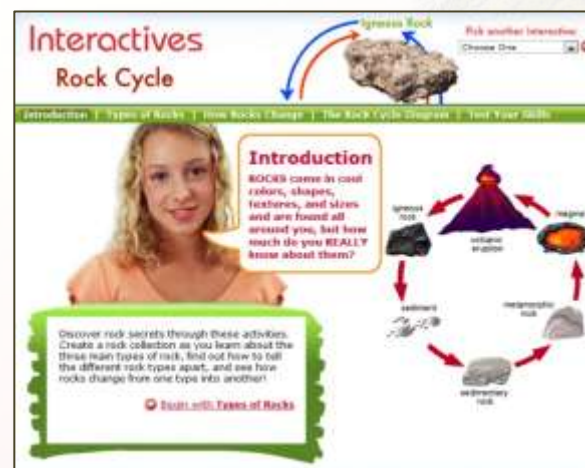
# Science

Start by looking at your state's grade level expectations in science. The following are for Florida.

1. Florida Standards - <http://www.floridastandards.org/Downloads.aspx>
2. FCAT Science Practice Tests - <http://fcat.fldoe.org/fcatitem.asp>
3. FCAT Released Tests - <http://fcat.fldoe.org/fcatrelease.asp>

## Science Resources

1. Making Science Labs Accessible - [http://www.washington.edu/doit/Brochures/Academics/science\\_lab.html](http://www.washington.edu/doit/Brochures/Academics/science_lab.html) . great ideas on how to make labs accessible for students with disabilities
2. Enchanted Learning Science - <http://www.enchantedlearning.com/categories/science/> . extensive online resource of printable early learning science activities
3. Simply Science - <http://www.slatersoftware.com/simplyscience.html> . graphic enhanced basic science materials aligned with the Florida Access Points for students taking the Alternate Assessment
4. LearningScience - <http://www.learningscience.org/> . online K-12 resource of free web interactives
5. National Science Foundation's Multimedia Gallery . <http://nsf.gov/news/mmg/index.cfm?s=2> . collection of images, video, audio, and more
6. Interactives - <http://www.learner.org/interactives/> . provides educators and students with strategies, content, and activities that can enhance and improve students' skills in a variety of curricular areas
7. Steps of the Scientific Method - [http://www.sciencebuddies.org/mentoring/project\\_scientific\\_method.shtml](http://www.sciencebuddies.org/mentoring/project_scientific_method.shtml) . basic overview of the scientific method with a nice visual diagram of the process
8. Try Science - <http://www.tryscience.org/> . science fair project ideas
9. SCIRUS - <http://www.scirus.com/srsapp/> . search engine for science content
10. Edheads.org - <http://www.edheads.org> . great interactive science activities
11. Enchanted Learning Science Dictionary - <http://www.enchantedlearning.com/science/dictionary/> . science for early learning
12. Apples 4 the Teacher - <http://www.apples4theteacher.com/> . free online classroom (up to grade 6) activities in a variety of curriculum areas
13. Science Writer - <http://sciencewriter.cast.org> . great online tool that supports students in writing lab and class science reports





## Physical Science

1. How Stuff Works - <http://science.howstuffworks.com/physical-science-channel.htm> . targets acoustics, energy, forensic science, nuclear science, optics, and physics
2. Frank Potter's Science Gems - <http://www.sciencegems.com/physical.html> . broad collection of links to physical science web resources
3. Simple Machines - <http://www.edheads.org/activities/simple-machines/> . learn about simple and compound machines
4. Physics4Kids - [http://www.physics4kids.com/files/motion\\_intro.html](http://www.physics4kids.com/files/motion_intro.html) . an overview of the basics of motion . students can use text-to-speech tools to hear this content read aloud



## Life Science

1. DNA From the Beginning - <http://www.dnafb.org/dnafb/> . an animated primer on the basics of DNA, genes, and heredity
2. DNA Interactive - <http://www.dnai.org/> . lesson plans and classroom activities . free registration for teachers
3. Kids Biology - <http://www.kidsbiology.com/> . online resources and biology games

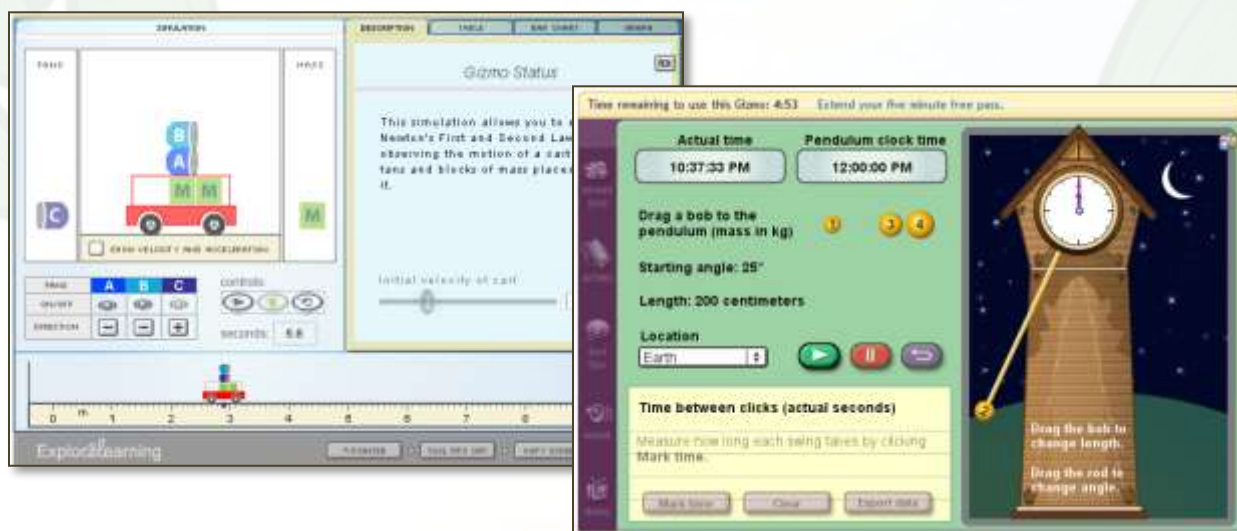
## Earth & Space Science

1. Why Earth Science - [http://www.agiweb.org/education/WhyEarthScience/Why\\_Earth\\_Science.pdf](http://www.agiweb.org/education/WhyEarthScience/Why_Earth_Science.pdf) . a pdf resource on why earth science is important
2. ToxTown - <http://toxtown.nlm.nih.gov/index.php> . a highly interactive resource on environmental health concerns and toxic chemicals found in everyday life . from the National Library of Medicine
3. The Water Cycle - <http://ga.water.usgs.gov/edu/watercycle.html> . water cycle diagrams and information available in a variety of languages
4. PowerUp - <http://www.powerupthegame.org/home.html> . 3D science game students can download. uses a phrase-based chat system so no inappropriate communication can take place. a teacher's guide is also available to support the study of earth science
5. Windows to the Universe - <http://www.windows.ucar.edu/> . content lessons on our planet, solar system, and the universe. each lesson is available in 3 different reading levels and in English or Spanish
6. Earth & Moon Viewer - <http://www.fourmilab.ch/earthview/vplanet.html> . view a map of the Earth showing the day and night regions at any time or view the Earth from the Sun or Moon
7. Starry Night (Win . Mac) - <http://www.starrynightstore.com/> . extremely realistic astronomy simulation software with activities for K-12
8. Stellarium (Win . Mac) - <http://www.stellarium.org/> . free planetarium for the computer
9. WorldWide Telescope - <http://www.worldwidetelescope.org/Home.aspx> . a Microsoft project that uses telescopic imagery to put the universe at your fingertips





10. JASON Project - <http://www.jason.org/public/whatis/start.aspx> . project oriented science curriculum where students interact with real scientists in the field
11. NASA Images - <http://www.nasaimages.org/> . free, searchable online library of NASA images and multimedia



### Virtual Labs / Simulations

1. OE-Cake - [http://oecake.wikia.com/wiki/OE-Cake\\_Wiki](http://oecake.wikia.com/wiki/OE-Cake_Wiki) . a 2.5D physics-based paint program where users can insert objects and see them interact under the laws of physics
2. ExploreLearning - <http://www.explorelearning.com> . extensive online set of science simulations and visualizations . each simulation can be used for free for up to 5 minutes per session
3. Froguts - <http://dissect.froguts.com/welcome.html> . virtual frog dissection software
4. NASA Virtual Scanning Electron Microscope - <http://learn.arc.nasa.gov/vlab/index.html> . a complete simulation of a scanning electron microscope
5. Virtual Chemistry Lab - <http://www.chemcollective.org/applets/vlab.php> . select from hundreds of standard reagents and manipulate them just like in a real lab
6. Virtual Chemistry - <http://www.chem.ox.ac.uk/vrchemistry/> . a comprehensive chemistry website from the University of Oxford. LiveChem is an interactive chemistry experiment, where users choose items to mix, and videos display the reaction
7. Interactive Periodic Table - <http://www.chem.ox.ac.uk/vrchemistry/pt/> . periodic table with picture representation for each element (when available)
8. It's Elemental - <http://education.ilab.org/itselemental/index.html> . interactive periodic table







### Technology Tools

1. EyeClops - <http://www.eyeclops.com/> . "toy" microscope that plugs into a TV or projector
2. Digital QX5 Computer Microscope - <http://store.digiblue.com/> . USB microscope for viewing microscopic organisms on a computer screen or projected on a large screen
3. ProScope - <http://www.bodelin.com/proscopehr> . usb hand-held digital microscope with a variety of lenses and kits
4. Timelapse Garden Camera - <http://www.hammacher.com/Product/76551?source=FROOGLE> . easy way to create time lapse videos
5. HandyAvi Time-Lapse - <http://www.azcendant.com/> . video software to help in making time lapse videos
6. Flix - <http://www.nimisis.com/projects/flix.php> . software for using web cams to make time lapse videos
7. Make Your Own Microscope - [http://highlightskids.com/Science/TryThis/h3TT1108\\_waterMicroscope.asp](http://highlightskids.com/Science/TryThis/h3TT1108_waterMicroscope.asp) . simple activity in which students create a microscope with a cup, plastic wrap, a rubber band, and some water
8. Go! Temp - <http://www.vernier.com/go/gotemp.html> . easy to use usb temperature probe with Logger Lite software
9. PicoScope Education Kit - <http://www.picotech.com/education/> . oscilloscope and data loggers kit with software for middle school grades up

**Tip** - Need a quick way to enlarge small objects, plants, insects, etc.? Many document cameras come with great zoom capabilities and can be used to enlarge and capture images of small objects "on the fly."

Or try a regular photo scanner. Place a transparency on the glass surface to protect it from any scratches and then place the object on the transparency. Lay a sheet of paper over the object you are scanning. Scan it into an image editing program at 600 dpi. You will then be able to view on screen, project, or print out a very large version of the scanned object.

### Making Science Personal

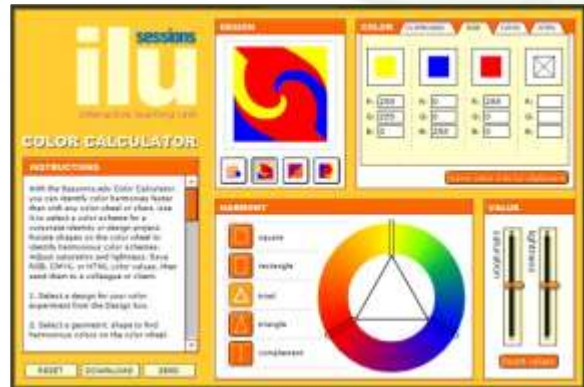
Some students will become more engaged in a science activity when it is their "personal" experiment; when the materials under the microscope came from their yard or their house.



# Creative Media

## Painting & Drawing

1. Color Wheel Color Calculator - <http://www.sessions.edu/Design-Career-Center/Design-Tools/Color-Calculator.asp> . free online tool for creating a variety of HTML, RGB, or CMYK color palettes
2. Color in Motion - <http://www.mariaclaudiacortes.com> . color basics and cultural perceptions of color presented in fun animations. can be viewed in English or Spanish
3. Tux Paint (Win) - <http://www.tuxpaint.org/> . free paint software for children
4. Sumo Paint - <http://www.sumopaint.com/home/> . free online paint and image editing program
5. Sketch & Smudge (Win) - <http://www.sketchandsmudge.com/> . inexpensive drawing software that realistically mimics chalk and smudge sticks. includes drawing tutorials
6. Art Rage (Win . Mac) - <http://www.artrage.com/artrage.html> . excellent natural media painting software that includes various "paper" types
7. Animation-ish (Win . Mac) - <http://www.animationish.com/> . amazing drawing and animation program for students of all ages
8. meMoov.com - [http://memoov.com/studio\\_page.aspx](http://memoov.com/studio_page.aspx) . create animations online with this easy tool
9. PicTaps - <http://roxik.com/pictaps/> . draw simple pictures and then animate them
10. Artthread - <http://www.artthread.org/> . interactive online art gallery with social networking and online art tools
11. Online Design Tools - <http://www.sessions.edu/Design-Career-Center/Design-Tools.asp> . free online design tools from the Sessions College



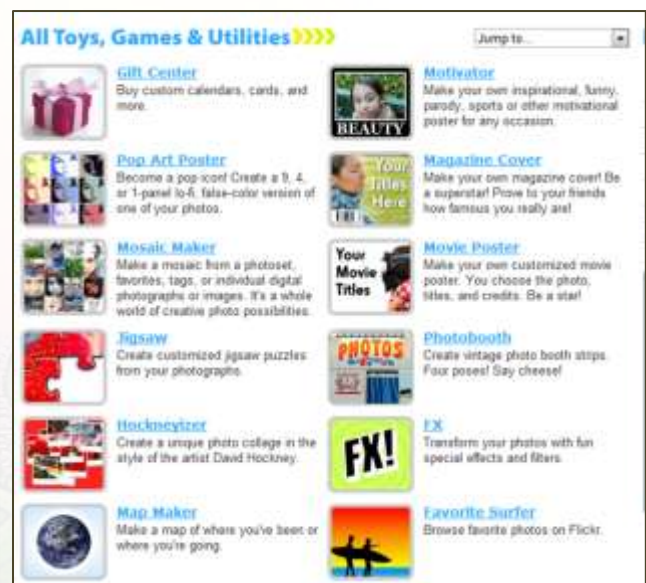
## Working in 3D

1. Google SketchUp - <http://sketchup.google.com/> . free 3D building creation program
2. Project Spectrum - <http://www.google.com/educators/spectrum.html> . information on the successful use of SketchUp by students on the Autism Spectrum
3. Planet Plopp - <http://www.planet-plopp.com/> . an easy to use 3D painting software program for kids
4. Draw 3D - <http://www.draw3d.com/lessons.htm> . Mark Kistler drawing instruction site with lots of training videos on how to draw with perspective and a 3D effect. scroll down in the video section to see some free drawing videos
5. BlockCad - <http://blockcad.net/> . virtual legos for Windows
6. LEGO Factory - <http://factory.lego.com/> . more virtual legos.
7. Bryce - [http://www.daz3d.com/i/software/bryce7?\\_m=d](http://www.daz3d.com/i/software/bryce7?_m=d) . render virtual worlds in stills and animations
8. Groboto - <http://www.braid.com/groboto-site/> . a set of 3D modeling, imaging and animation tools for creating simple and complex 3D models



## Photography/Multimedia

1. Picasa (Win) – <http://picasa.google.com/> . free software to edit and organize photos, create slide shows, post to blogs, and more
2. Pixlr - <http://www.pixlr.com/> . online photo editor
3. Photoshop.com - <https://www.photoshop.com/> . online service for storing and editing photos using an “express” online version of Photoshop. the basic level is free
4. Flickr Toys – <http://bighugelabs.com/flickr/> . incredible things to do with photos. great fun
5. Smilebox - <http://www.smilebox.com> . collection of free and pay tools for creating scrapbooks, slideshows, greetings, photo albums, and collages
6. Slideroll - <http://www.slideroll.com/> . create online slideshows
7. Photosynth - <http://photosynth.net/default.aspx> . create incredible photo based vistas and interactive environments with this online tool and your photos
8. Cinema - <http://www.learner.org/interactives/cinema/index.html> . learn about the process of filmmaking
9. Xtra normal - <http://www.xtranormal.com/> . online text-to-movie tool where students can create characters, add clothing and type in a script then watch the characters “act” out the script.
10. Voki - <http://www.voki.com/> . free online tool to create talking avatars
11. Kreative Komix - <http://www.kreativekomix.com/> . easy to use creative software for making story boards, stories, and animations
12. HandyAvi Time-Lapse - <http://www.azcendant.com/> . video software to help in making time lapse videos
13. Flix - <http://www.nimisis.com/projects/flix.php> . software for using web cams to make time lapse videos



Flickr Toys

## Audio Capture/Editing

1. Audio Hijack Pro (Mac) - <http://www.rogueamoeba.com/audiohijackpro/> . captures any audio on the computer
2. Total Recorder (Win) - <http://www.highcriteria.com/> . captures any audio on the computer
3. Audacity (Win . Mac) - <http://audacity.sourceforge.net/> . free audio editing software
4. Record (Win . Mac) - <http://www.propellerheads.se/> . full featured music recording studio



## Music

1. Music Resources for Teachers - <http://www.teachervision.fen.com/music/teacher-resources/6647.html> . great online collection of lessons plans, clip art, printable resources, and cross curricular ideas
2. Technology Integration: Music - <http://its.leesummit.k12.mo.us/music.htm> . extensive list of links to music resources
3. Dot Mixer - <http://www.exploratorium.edu/music/exhibits/dotmixer/index.html> . online easy stereo music creation activity with preset sounds. try this on an interactive whiteboard with stereo speakers on each side
4. JamStudio - <http://www.jamstudio.com/Studio/index.htm> . online loop-based music creation program
5. Riffworks (Win . Mac) - <http://www.sonomawireworks.com/riffworks.php> . multi-track audio recorder
6. NotePad (Win . Mac) - <http://www.finalemusic.com/notepad/> . music notation program that supports the creation of complex musical arrangements that can be printed or played by the computer
7. GarageBand (Mac) - <http://www.apple.com/ilife/garageband/> . a great loop-based audio program that also includes the ability to record voice (great for creating podcasts) and other instruments as well as interfacing with a keyboard to control digital synthesizers, making it a full digital studio
8. Mixcraft (Win) - <http://www.acoustica.com/mixcraft/> . inexpensive multi-track audio recorder that includes loops
9. Reason (Win . Mac) - <http://www.propellerheads.se/> . full featured digital music creation with virtual synthesizers and effects
10. Record (Win . Mac) - <http://www.propellerheads.se/> . full featured digital recording studio that works seamlessly with Reason
11. Acid (Win) - <http://www.sonycreativesoftware.com/products/acidfamily.asp> . loop-based music creation software that comes in several versions. includes extensive recording features in addition to the loops. has the capability to control digital synthesizers with MIDI keyboards



## iPod Touch / iPhone / iPad Music Apps

1. FourTrack - <http://www.sonomawireworks.com/iphone/fourtrack/> . songwriting and practice tool
2. easyBeats - <http://www.hopefullyuseful.com/view/easybeats> . quick and easy way to create great sounding 4 bar beats
3. Bebot - <http://www.normalware.com/> . fun and engaging app with a robot synth. make it move and "sing sounds" with your fingers
4. iShred - <http://frontierdesign.com/iShred/> (also look for Guitar, Piano Studio, and others from this company)
5. miniSynth PRO - <http://www.yonac.com/> . learn the basics of sound production with this professional subtractive/FM synthesizer. great on the iPad





# 3D Games & Virtual Worlds

*While virtual may not be real it can be "actual." Just as a virtual classroom has actual teaching occurring, a virtual world can have actual communication, socialization, commerce, and learning.*

3D games and virtual worlds provide opportunities for students to engage in project based learning, problem solving, and social community development. They provide an excellent environment in which to develop 21<sup>st</sup> century skills and they have the advantage of being ongoing so students can interact in many of these environments at school and at home; thereby supporting efforts in continuity of learning. Initial research indicates that these environments are highly engaging for many students.

One of the most powerful aspects of virtual worlds for students with disabilities is that everyone's avatar in a virtual world has the same virtual abilities. Every resident can sky dive, run, fly, swim, dance, etc. This move from physical abilities to virtual abilities can have a significant impact on the development of self-identify, shared identify, and community.

## Articles / Research

- Avatars Teach Teens About Self-Image - <http://www.edutopia.org/digital-generation-self-image-avatars>
- Focus on 21st Century Skills - <http://www.eschoolnews.com/news/top-news/index.cfm?i=55881>
- Gaming Improves Math Scores - <http://www.eschoolnews.com/news/around-the-web/index.cfm?i=55919>
- Research on Impact on Learning - <http://www.eschoolnews.com/news/top-news/index.cfm?i=54917>
- Nearly Every Kid a Gamer - <http://www.eschoolnews.com/news/top-news/news-by-subject/research/?i=55252>
- A Qualitative Meta-Analysis of Computer Games as Learning Tools - <https://irma-international.org/downloads/excerpts/7960.pdf>
- Social Skills in Second Life - <http://www.msnbc.msn.com/id/7012645/>
- 21<sup>st</sup> Century Skills - <http://www.21stcenturyskills.org/route21/>

From a presentation by David Gauntlett & Lizzie Jackson - <http://www.openeducation.net/2008/06/29/virtual-worlds-offer-meaningful-educational-opportunities-for-children/>

## Types of Players (different orientations to the environment)

- explorer - investigator (following a quest or journey)
- self stampers (presenting themselves to the world)
- social climber (social position within the environment)
- collector - consumer (accumulating things of value)
- fighters (destruction, superpowers)
- power users (giving others the benefit of their knowledge and expertise)
- life-system builders (creating new lands and environments)
- nurturers (looking after their avatars and pets)





Virtual games can be highly successful with students with disabilities though attention needs to be given to support needs and assistive technologies. Resources include:

1. Assistive Gaming . <http://www.assistivegaming.com/>
2. AbleGamers . <http://ablegamers.com/>
3. PCS Games . <http://www.pcsgames.net/>

### Growth in Virtual Worlds

The following shows the growth in virtual world participation by age group for the year 2009:



Ages 5 to 10: 77 million to 179 million  
Ages 10 to 15: 246 million to 392 million  
Ages 15 to 25: 73 million to 193 million  
Ages 25+ : 23 million to 39 million

Total # of virtual world citizens: 803 million

*Our children and students are active in virtual worlds. Are you?*

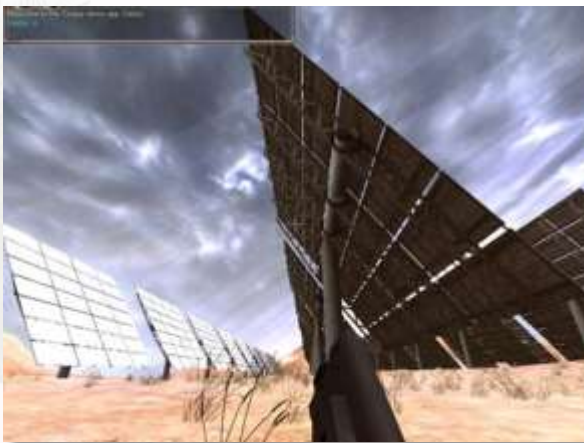
data from <http://www.kzero.co.uk/>





### Example 3D Games / Virtual Worlds

1. SMILE (science and math in an immersive learning environment) - <http://www2.tech.purdue.edu/cgt/I3/SMILE/> . a virtual world learning environment being developed specifically for students who are deaf or hard of hearing
2. Webkinz - <http://www.webkinz.com/> . take care of virtual pets
3. JumpStart Virtual World - <http://www.jumpstart.com/> . a mix of a virtual world with typical interactive learning activities in a game to earn awards
4. Dimension U – <http://www.dimensionu.com> . virtual world targeting math, science, and history
5. Quest Atlantis - <http://atlantis.crlt.indiana.edu/> . virtual world targeting social responsibility, compassionate wisdom, creative expression, and more
6. PowerUp - <http://www.powerupthegame.org/home.html> . 3D science game students can download. uses a phrase based chat system so no inappropriate communication can take place. a teacher's guide is also available to support the study of earth science



Power Up



Spore

7. Spore - <http://www.spore.com/> . amazing science game where the student controls the course of evolution from the cell stage through space exploration. go to the web site and download the free creature creator
8. BarbieWorlds.com - [http://www.barbiegirls.com/homeMtl\\_a.html](http://www.barbiegirls.com/homeMtl_a.html) . explore a 3D environment designed for girls
9. ZulaWorld - <http://www.zulaworld.com/#> . virtual exploration of science, math, and astronomy
10. River City - <http://muve.gse.harvard.edu/rivercityproject/> . virtual environment designed to promote the development of scientific inquiry and 21<sup>st</sup> century skills.
11. Whyville - <http://www.whyville.net/smmk/nice> . virtual world designed for pre-teen and teen boys and girls
12. Wilostar3D - <http://www.wilostar3d.com> . SACS accredited online homeschooling program and 3D virtual environment for 6-12
13. Avatar Storytellers - <http://www.avatarstorytellers.com> . a multiplayer online educational virtual world designed for classroom students ages 9-12
14. Florida Virtual School Conspiracy Code - <http://www.flvs.net/areas/flvscourses/ConspiracyCode/Pages/default.aspx> . complete history course that takes place within a 3D game environment. a downloadable demo is available
15. Heritage Key - <http://heritage-key.com/> . extensive collection of text, graphics, multimedia, and virtual environments on a variety of cultures around the world

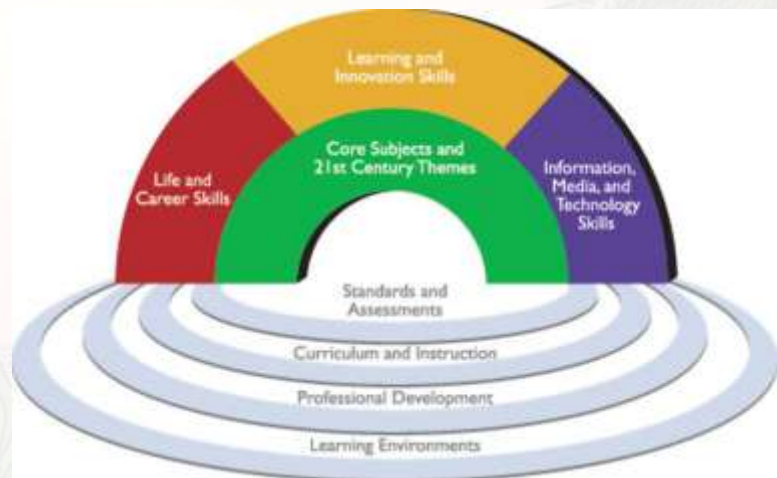




16. Club Penguin - <http://www.clubpenguin.com/> . virtual world from Disney that includes filtered chat and live moderators
17. Edusim - <http://edusim3d.com/index.php> . a free virtual environment designed for interactive whiteboards
18. Second Life - <http://www.secondlife.com> . one of the most popular virtual world environments, and one of the most sophisticated
19. OpenSimulator - [http://opensimulator.org/wiki/Main\\_Page](http://opensimulator.org/wiki/Main_Page) . an open source multi-platform 3D application server that can be used to create virtual worlds on a single computer or on a network

### 3D Worlds & 21st Century Skills

21st century skills include core subjects taught in a global context; learning and innovation skills including critical/creative thinking, communication & collaboration; information and media literacy; and life career skills, including the ability to be flexible, adaptable, self-directed, accountable, and responsible. Virtual worlds provide highly engaging learning environments to address these skills.



The trick here is to select a world that supports your learning goals. Open source systems like Open Simulator can be a great choice. Students in a classroom or from classrooms around the globe can collaborate on projects like creating a museum with information panels on a variety of topics. Because this environment is highly project oriented and collaborative it is an excellent vehicle to address rigor and relevance, problem solving, and critical/creative thinking. It is also a highly engaging environment to address core subjects.

Spore is an amazing world in which to explore concepts of evolution, change, and social literacy. While students guide the evolution of their creations, the characters actually develop their own "intelligence" that guides their responses to the world around them. Eventually they start to operate in tribes providing great opportunities to discuss social and global issues.

<http://www.p21.org/>



# iPad

The iPad has brought about a massive change in how we look at learning tools and how we acquire software. The iTunes App Store makes getting software apps a very easy process, and most of the software available is very affordable. Here are some great apps to try.

**Internet/Web Browsing** – Different browsers have different features. Here are a few.

1. Perfect Web Browser - <http://itunes.apple.com/us/app/perfect-web-browser-extraordinary/id373916467?mt=8> . includes real tabs and VGA out support
2. Web Reader - <http://itunes.apple.com/us/app/web-reader-text-to-speech/id320808874?mt=8> . text-to-speech for web pages. great with some of the digital books available online
3. Expedition - <http://itunes.apple.com/us/app/expedition-vga-composite-component/id369305234?mt=8> . web browser specifically designed for use with VGA out. includes a laser pointer mode

## File Management

1. Dropbox - <http://itunes.apple.com/us/app/dropbox/id327630330?mt=8> . app that allows the user to access files stored online using the free Dropbox cloud service. up to 2 gig of documents can be accessible and quickly viewed on the iPhone or iPad
2. GoodReader - <http://itunes.apple.com/us/app/goodreader-for-ipad/id363448914?mt=8> . excellent app for the iPad for viewing PDF or TXT files. integrates well with services like Dropbox
3. Elements - <http://itunes.apple.com/us/app/elements-dropbox-powered-text/id382752422?mt=8> . versatile text editor that communicates with Dropbox so any notes taken on an iPod Touch or iPad will automatically be saved in your Dropbox folder on your computer

## Organization

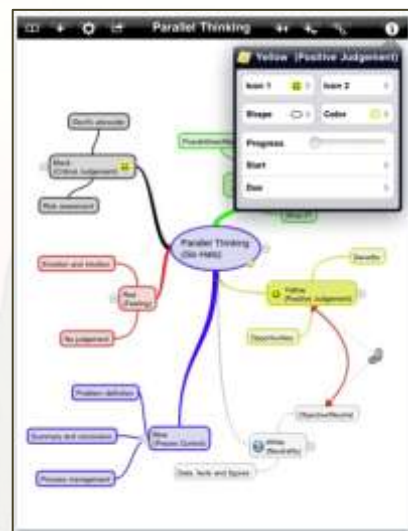
1. Awesome Note (+Todo) - <http://itunes.apple.com/us/app/awesome-note-todo/id320203391?mt=8> . note taker and to-do manager with calendars to help you organize your life
2. OmniFocus - <http://itunes.apple.com/us/app/omnifocus/id284885288?mt=8> . professional task and project management application
3. iThoughtsHD - <http://itunes.apple.com/us/app/ithoughtshd-mindmapping/id369020033?mt=8> . mindmapping for the iPad

## Math

1. PopMath Basic Math - <http://itunes.apple.com/us/app/popmath-basic-math/id295536766?mt=8> . engaging game to help kids of all ages practice basic math skills
2. Dress Up Princess Math - <http://itunes.apple.com/us/app/dress-up-princess-math/id377131772?mt=8> . solve math problems to obtain tiaras and gowns

## Science

1. BrainPOP Featured Movie - <http://itunes.apple.com/us/app/brainpop-featured-movie/id364894352?mt=8> . short videos on a variety of topics
2. Star Walk for iPad - <http://itunes.apple.com/us/app/star-walk-for-ipad-interactive/id363486802?mt=8> . hold this up to the sky and it will show you the stars and constellations from your position





# FCAT Accommodations

Many students with disabilities benefit from accommodations in the classroom that they can continue to use when taking a high stakes test like the FCAT or end of year course exams. Here are some resources along with a few examples of allowable testing accommodations. Be sure to check the Accommodations and Modifications website, <http://www.cpt.fsu.edu/ese/>, for updated information.

## Resources

1. Accommodations: A Guide for Educators - [http://www.cpt.fsu.edu/ese/topics\\_accom.htm](http://www.cpt.fsu.edu/ese/topics_accom.htm) . extensive information on accommodations and testing accommodations as approved in Florida
2. FCAT Accommodations for Students with Disabilities: For Parents and Teachers - <http://www.fldoe.org/ese/fcatasd.asp> . a basic guide and overview of allowable FCAT accommodations
3. The IEP Team's Guide to FCAT Accommodations <http://www.fldoe.org/ese/fcatasd.asp> . an ebook on FCAT accommodations

**Presentation Accommodations** - Presentation accommodations can include large print versions of the test, braille versions of the test, the use of color transparencies, altered spacing of items, visual navigation cues, tabbed pages, highlighter tape to assist in focus, verbal encouragement, and auditory accommodations such as reading or signing, except in the case of the reading assessment items.

**Responding Accommodations** - Responding accommodations can include written, signed, and verbal responses; special paper with raised or colored lines; dictation to a proctor; text-to-speech technology to indicate an answer; switch systems; alternative keyboards to generate letters or words; pointing devices; communication devices; abacus for students with visual impairments; and math grids.

**Scheduling Accommodations** - Scheduling accommodations can include the time of day a test is taken, break schedules, and extended time.

**Setting Accommodations** - Setting accommodations can include special lighting, adapted furniture, special acoustics, the use of an FM personal amplification system, noise buffers, reduction of distracters, increased or decreased opportunities for movement, and the administration of the test in a familiar setting.

**Assistive Devices** - Assistive devices allowed include alternate keyboards, adapted calculators (such as having large numbers or speech output), non-sentence based devices for oral or written responses, visual magnification devices, communication devices, auditory amplification, and other AT commonly used by the student in the classroom as long as it doesn't impact the purpose of the assessment.

**Section 504 Implications** - To ensure that all qualified students with disabilities in our public education system are provided necessary aids, services, or accommodations during the administration of a test, districts must ensure that students with disabilities who are not currently receiving special education services or who do not have a current IEP are considered for and, if appropriate, provided test accommodations. In this case, testing accommodations must be listed in the student's 504 plan. (from *FCAT Accommodations for Students with Disabilities*) For all students who request accommodations on the FCAT, those accommodations must be a part of that students' regular instructional support and be noted on their IEP or 504 plan.

Check with you local FDLRS Center (<http://www.fdlrs.com>) for more information on accommodations for students with disabilities.



# AT Competencies



**Florida's Assistive Technology Assessment Competencies Web Site** - <http://www.florida-ese.org/atcomp>

The Department of Education supports the development of assistive technology assessment competencies for Local Assistive Technology Specialists (LATS) and other technology providers who assess students for needed technology accommodations. These competencies focus on fundamental concepts, knowledge, and skills for assessing assistive technology in educational settings. They are crafted from the perspective of the assistive technology professional working with students at the school and district level in the state of Florida, and consequently, are specific to Florida.

To assist LATS and technology providers, the Bureau of Exceptional Education and Student Services (BEES), in conjunction with the Florida Center for Interactive Media (FCIM) and the FDLRS Regional Technology Specialists, have developed a Web-based competency management tool that will allow technology providers to meet and manage competency achievement through a skills inventory procedure.

## Competency 1

	Be knowledgeable about and implement the school district's assistive technology (AT) assessment procedures.
	Implement the district's AT referral procedures.
	Describe the function of the individual educational plan (IEP) team as related to AT assessment.

## Competency 2

	Understand federal and state regulations and policies related to the consideration and implementation of assistive technology in Florida schools.
	Understand the Individuals with Disabilities Education Act (IDEA) directives regarding AT consideration and implementation.
	Use current technical assistance papers (TAP) and Florida Statutes for consideration and implementation of AT in Florida schools.
	Understand the implementation of AT accommodations in the classroom.

## Competency 3

	Select and use appropriate measurement tools, strategies, and activities to assess a student's AT needs.
	Describe at least one assessment tool for each area being assessed.
	Select the appropriate tools based on individual student needs.
	Implement the assessment process.



**Competency 4**

	Consider a continuum of AT devices, services, and resources that may be used to address the needs of students.
	Follow procedure for providing equipment as a result of AT assessment.
	Implement a continuum of low-tech to high-tech AT tools for a specific learning task.
	Utilize the continuum of services and resources available from school-based, district, regional, state, and national levels.

**Competency 5**

	Provide leadership and support to professionals, students, and family members/caregivers by the team conducting AT assessment activities.
	Know team-building skills needed to work with the IEP team.
	Identify and collaborate with providers in the AT assessment process.

**Competency 6**

	Lead the assessment teams in understanding what the student's needs are relative to his/her abilities, educational goals, and environmental factors that relate to the selection and delivery of AT devices and services.
	Lead the assessment team in clarification of findings.
	Facilitate the discussion of abilities, goals, and environmental factors.

**Competency 7**

	Interpret and present the results of AT assessments to the IEP teams in a way that supports effective decision-making based on the student, the educational program, and data gathered during the assessment process.
	Interpret results of the AT assessment to the IEP team using non-technical language.
	Clarify pertinent assessment information for effective decision making.

**Competency 8**

	Explain the strengths and challenges of specific AT devices and services and the factors that may affect their use.
	Offer options for professional development training.
	Discuss the challenges and barriers that effect AT use.

**Competency 9**

	Collaborate with those in charge of implementing the IEP to formulate and initiate a plan using AT to support the educational achievement of the students.
	Design an action plan for AT use.
	Describe a data collection plan for AT use.

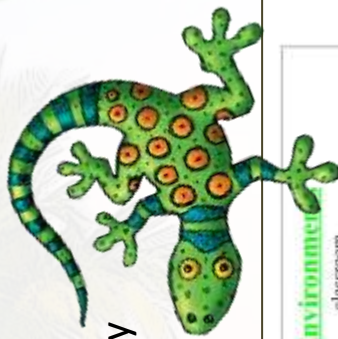
For more information on the Competencies Web Site contact a FDLRS Regional Technology Specialist  
<http://www.florida-ese.org/atcomp/contacts.htm>



# Assistive Technology (AT)

"Assistive technology device means any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability."

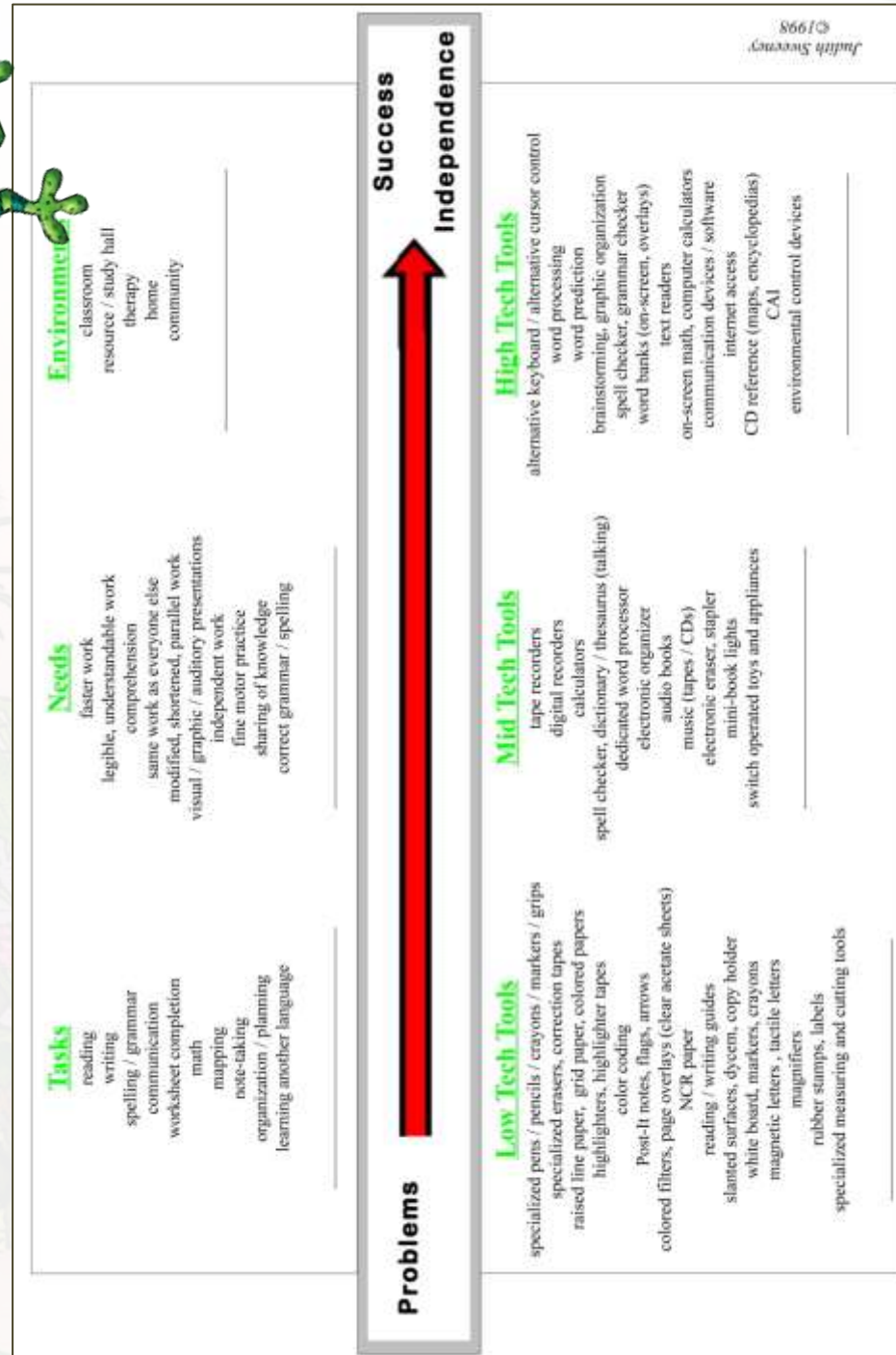
1. ATTO - <http://atto.buffalo.edu/> . online resources and information on assistive technology for students with disabilities in elementary school settings.
2. AT Cycle Toolkit - [http://olms.cte.jhu.edu/olms/output/page\\_site.php?pageID=9514&siteID=1567](http://olms.cte.jhu.edu/olms/output/page_site.php?pageID=9514&siteID=1567) . an AT support toolkit from Johns Hopkins University



## The Assistive Technology Continuum by Judith Sweeney

<http://www.onionmountaintech.com/>

Devices to try if a student has a problem with





## Simple Accommodations

Assistive technology can range from simple accommodations to complex computer-based devices. One of the best resources for simple assistive technologies is Onion Mountain Technology - <http://www.onionmountaintech.com/>

Here are some examples from a presentation developed by Carol Norton, Kristin Hope, and Eloise Hayes.

### ★ ★ ★ Plastic Colored Transparencies



**Improves visual perception of text**

- Blurry letters
- Letters that move
- Poor spacing between letters & words while copying
- Complains of eyestrain
- Words that seem to blend

★ ★

### ★ ★ ★ Highlighter Tapes

Colors: Pink  
Green  
Yellow  
Orange



### ★ ★ ★ Marking Pages/Books & Notebooks

#### Post-It Mini Flags

Color might be important:

- Pink - Important vocabulary
- Green - Names to know
- Purple - Picture/map
- Yellow - Dates
- Blue - Chapter questions



### ★ ★ ★ Pencil Grippers



Hand/finger fatigue  
Poor writing due to lack of fine motor control

Caution- don't place the grip too high!

★ ★ ★

### ★ ★ ★ Plastic Writing Guide



Fits over an 8 1/2 by 11 piece of paper

Keeps letters in a given space

★ ★ ★

### ★ ★ ★ Non-Abrasive Erasers



If erasing continues to be difficult a student might use...

★ ★ ★



# Computer Access

All students should have access to computers. However, not all students can use a typical keyboard and mouse. Many students need some type of alternative input device to operate a computer. The following resources can help teachers, therapists, and parents identify appropriate computer access assistive technology.

1. Florida's Assistive Technology Assessment Competencies Web Site - <http://www.florida-ese.org/atcomp>

**Alternative Keyboards** – provides alternatives to a regular keyboard, with different key sizes as well as the number and type of keys. Some include built-in mouse functions.

1. IntelliKeys - <http://www.intellitools.com/> . popular, customizable keyboard with a variety of overlays
2. Big Keys - <http://www.bigkeys.com/> . large keys with color choices
3. Half Keyboard - <http://www.halfkeyboard.com/products/hkbinfo.html> . a small one hand keyboard
4. USB Mini - <http://www.ablenetinc.com/Store/tabid/205/Default.aspx?CategoryCode=43> . small keyboard that includes keyboard and mouse functions
5. ILT Alternative Keyboards – ILT is a source for a variety of assistive technologies, including alternative keyboards
  - a. ILT Alternative Keyboards – [http://www.iltsource.com/Alternative\\_Keyboards\\_s/59.htm](http://www.iltsource.com/Alternative_Keyboards_s/59.htm)
  - b. ILT Large Key keyboards – [http://www.iltsource.com/Large\\_Key\\_Large\\_Print\\_Keyboards\\_s/57.htm](http://www.iltsource.com/Large_Key_Large_Print_Keyboards_s/57.htm)
  - c. ILT Keyboards & Keyguards – [http://www.iltsource.com/Keyboards\\_Keyboard\\_Guards\\_s/177.htm](http://www.iltsource.com/Keyboards_Keyboard_Guards_s/177.htm)
  - d. ILT Keyboard Accessories - [http://www.iltsource.com/Keyboard\\_Accessories\\_s/60.htm](http://www.iltsource.com/Keyboard_Accessories_s/60.htm)



Intellikeys



**Communication Devices as Alt Keyboards** – Some students use a communication device as their computer system and alternative keyboard. Below are some example devices.

1. ECO2 - <http://www.prentrom.com/eco>
2. V & Vmax - <http://www.dynavoxtech.com/products/v/>

**On-screen Keyboards** – On-screen keyboards float over other software programs and allow text input using a mouse, touch screen, or other input method. Both Windows and Macintosh include basic built-in on-screen keyboards. Here are some additional ones with extra features.



ECO2





1. Click n'Type (Win) - <http://www.lakefolks.org/cnt/> . free onscreen keyboard with basic word prediction features
2. OnScreen (Win . Mac) - <http://www.rjcooper.com/> . an onscreen keyboard with "word complete" features. 14 day trial. you can request a free CD
3. Keystrokes (Mac) - <http://www.assistiveware.com/keystrokes2.php> . a nice looking onscreen keyboard that works with OSX and includes word prediction features
4. Reach (Win) - <http://www.ahf-net.com/> . a feature rich onscreen keyboard with word prediction. very customizable. 30 day trial
5. My-T-Mouse and My-T-Mouse for Kids (Win) - <http://www.imgpresents.com/>

#### Alternative Mouse – Options for students who cannot use a regular computer mouse.

1. Joy Stick & Trackballs - <http://www.traxsys.com/AssistiveTechnology/tabid/1087/Default.aspx>
2. AbleNet Mouse Alternatives - <http://www.ablenetinc.com/Home/Products/MouseAlternatives/tabid/357/Default.aspx>
3. SAM Trackball - <http://www.rjcooper.com/sam-trackball/index.html>
4. SAM Joystick - <http://www.rjcooper.com/sam-joystick/index.html>
5. Ergonomic Touchpad - <http://www.ergonomictouchpad.com/>
6. Touch Windows - <http://www.magictouch.com/addon.html>
7. Wafer Switch - <http://www.ablenetinc.com/Store/tabid/205/Default.aspx?CategoryCode=144>
8. Arm & Wrist Supports - <http://www.ergodirect.net/wristandarmsupports.aspx>



#### Mouse Emulation for Switch Control

1. CrossScanner (Win) - <http://www.rjcooper.com/cross-scanner/index.html>
2. ScanBuddy (Win) - <http://www.ahf-net.com/Scanbuddy.htm>
3. DiscoverPro (Win) & DiscoverEnvoy (Mac) - <http://www.madentec.com/products/>



## Switch & Switch Interface Systems

1. Switch Systems from AbleNet - <http://www.ablenetinc.com/Home/Products/Switches/tabid/57/Default.aspx>
2. Switch Comparison Grid from AbleNet - [http://www.ablenetinc.com/downloads/Switch\\_Grid\\_Aug10\\_UPDATED\\_PRICE.pdf](http://www.ablenetinc.com/downloads/Switch_Grid_Aug10_UPDATED_PRICE.pdf)
3. Interfaces from AbleNet - <http://www.ablenetinc.com/Store/tabid/205/Default.aspx?CategoryCode=74>
4. Switch Interface Pro - [www.donjohnston.com/products/access\\_solutions/hardware/switch\\_interface\\_pro\\_5/index.html](http://www.donjohnston.com/products/access_solutions/hardware/switch_interface_pro_5/index.html)
5. IntelliSwitch - <http://www.madentec.com/products/intelliswitch.php>
6. Switch Scanning Methods - <http://www.bltt.org/switch/scanning.htm> . online animation examples of switch scanning systems



Jelly Bean Switch



Dual Switch Latch Timer

**Large Cursors** – Both Windows and Macintosh computers have built-in options for changing the size of the cursor. Below is a resource for more options.

1. Biggy - <http://www.rjcooper.com/biggy/index.html>

**Head Tracking** – Provides head control of a computer.

1. TrackerPro - <http://www.madentec.com/products/tracker-pro.php> . no additional software is needed
2. HeadMouse - <http://www.orin.com/access/headmouse/>

**Screen Magnification** – Both Windows and Macintosh offer basic built-in screen magnification. Here are additional ones with extra features.

1. MAGic (Win) – <http://www.freedomscientific.com/products/lv/magic-bl-product-page.asp>
2. ZoomText (Win) - <http://www.aisquared.com/Products/index.cfm>
3. Magnifiers - <http://www.magnifiers.org/> . an extensive resource for all types of screen magnifiers

**Screen Readers** – Provides audio output for everything on the computer screen.

1. JAWS (Win) – <http://www.freedomscientific.com/jaws-hq.asp> . screen reader that supports Braille devices
2. Window-Eyes (Win) - <http://www.gwmicro.com/> . screen reader that supports Braille devices
3. VoiceOver (Mac) - <http://www.apple.com/accessibility/voiceover/> . screen reader with plug and play support for Braille devices

**Speech-to-Text** – Provides computer control via voice

1. Dragon Naturally Speaking (Win) – <http://www.nuance.com/naturallyspeaking/> . comes in several versions
2. MacSpeech Dictate (Mac) - [http://www.macspeech.com/product\\_info.php?products\\_id=592](http://www.macspeech.com/product_info.php?products_id=592)



# Augmentative & Alternative Communication (AAC)

## Purpose of Communication

- ☐ To indirectly control the environment
  - To obtain or reject something
- ☐ To regulate social interactions
  - To express an emotion or interact with someone
- ☐ To receive and convey information and ideas

## Types of AAC

- ☐ No Technology
  - Signs
  - Gestures
- ☐ Light Technology (Static Displays)
  - Pictures (PECS, communication boards/books)
  - Voice output devices
- ☐ High Tech (Dynamic Displays)
  - Speech Generating Devices

From "Autism & Augmentative Alternative Communication (AAC)" by Wendy Gahimer M.A. CCC-SLP

## Resources

1. Boardmaker - <http://www.mayer-johnson.com/products/boardmaker-plus/> . software for creating communication boards and adaptive content using picture symbols
2. Pogo Boards - <http://www.pogoboards.com/> . web based tools for creating manual communication boards
3. TICO - <http://www.proyectotico.es/wiki-en/index.php/Home> . free software and image library for creating interactive and printed communication boards
4. Dynamic display page sets - <http://fdlrsregion3dynamicdisplaypages.wikispaces.com/> . powerpoint slides were made of the preprogrammed page sets in these devices so we could provide them to students as backup manual communication books and to teachers as reference materials. our preferred print setup in Powerpoint was "handouts, 2/page". devices included Vantage, SpringBoard, SpringBoard Lite, ChatPC, DynaVox series 4, and Palmtop.

## Devices

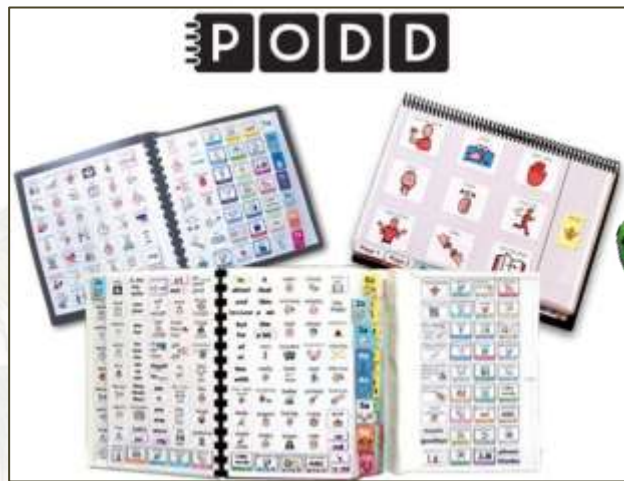
1. Eye Gaze Boards - [http://www.bridgeschool.org/transition/multimodal/eye\\_gaze\\_boards.php#not](http://www.bridgeschool.org/transition/multimodal/eye_gaze_boards.php#not) . resources and videos on how to use eye gaze boards
2. AbleNet - <http://www.ablenetinc.com/Home/Products/CommunicationProducts/tabid/56/Default.aspx> . wide range of communication devices, from single recorded message up to 64 recorded message systems
3. GoTalk Talkers - <http://www.attainmentcompany.com/home.php?cat=253> . a variety of easy to use recordable message devices: from 1 message up to 100
4. ZYGO - <http://www.zygo-usa.com/> . ZYGO has a variety of AAC devices, including text to speech devices, digital recording, and dynamic display
5. AMDi - <http://www.amdi.net/> . array of communication devices, from single message to dynamic touch screens
6. ProxTalker - <http://www.proxtalker.com/> . moveable picture communication system



Dynavox Xpress



7. DynaVox - <http://www.dynavoxtech.com> . Dynavox has a full product line of dynamic display devices, including portable devices like the Dynavox Xpress and complete communication systems like the V and Vmax
8. Prentke Romich - <http://www.prentrom.com/> . Prentke Romich has a full product line of dynamic display AAC devices, including portable devices like the Vantage Lite and full devices like the ECO2
9. Proloquo2Go - <http://www.proloquo2go.com/> . a product from AssistiveWare that brings text-to-speech and symbols used in a communication system on the iPhone, iPod Touch, and iPad.
10. Proloquo - <http://www.assistiveware.com/proloquo.php> . communication software for the Mac



### **PODD – Pragmatic Organization of Dynamic Display (PODD)Communication Books**

<http://www.spectronicsinoz.com/product/27918> . a comprehensive resource that provides templates and guidelines for the use of communication books to support the development of communication and language for children who use direct pointing with a whole hand, finger, or pointer

### **PIXON -**

<http://www.aac institute.org/Resources/ProductsandServices/Pixons/index.html> . an early language program using low-tech manual communication boards

1. Pixon Project Kit flyer -

<http://www.aac institute.org/Resources/ProductsandServices/Pixons/PixonSheet.pdf>



**Cue Cards** - <http://www2.easternhealth.org.au/language/cueCards/index.asp> . a free resource to create basic manual communication boards for people who have limited speech or limited English



# Visual Strategies

From communication boards to activity calendars to daily schedules, the use of symbol rich materials can help many students interact successfully with their environment, peers, and teachers.

## General Resources

1. Use Visual Strategies - <http://www.usevisualstrategies.com/Welcome.aspx> . information and resources on how to provide visual strategies and supports to help organize the environment, teach skills, support communication, develop calendars, and establish rules and behavior guidelines for students with Autism Spectrum Disorders and other students with disabilities
2. Visual Aids for Learning - <http://www.visualaidsforlearning.com/preschool-pack-learning.htm> . visual supports to help students stay on task and focus on learning activities
3. Polyxo - <http://www.polyxo.com/> . resources and materials to support teaching students with ASD
4. Fraser - [http://www.fraser.org/products/autism\\_support.html?gclid=CI\\_32qDvmJ8CFRQhnAodM0N8Kg](http://www.fraser.org/products/autism_support.html?gclid=CI_32qDvmJ8CFRQhnAodM0N8Kg) . boards and materials for students with ASD
5. pictureSET - <http://www.setbc.org/pictureset/> . collection of downloadable visual supports for receptive and expressive communication
6. Practical Autism Resources - <http://www.practicalautismresources.com/printables> . includes more than 100 pages of free printable items



## Curriculum

1. Polk County FDLRS Boardmaker Resources - <http://www.polk-fl.net/staff/resources/ese/resourcesboardmaker.htm> . resources that support communication, curriculum, and behavior
2. eLIVE - <http://www.symbolworld.org/eLive/index.htm> . a monthly magazine for symbol readers
3. prekindergarten Boardmaker - <http://prekese.dadeschools.net/BMD/activityspecific.html> . downloadable activities for Pre-K
4. Thematic Visual Supports Wiki - <http://fdlrsregion3thematicvisuals.wikispaces.com/> . extensive collection of downloadable visual resources created with Boardmaker 5.0 on a variety of themes. includes BIG/LITTLEmack, symbols, folder activities, snack/art activities, and vocabulary sets
5. Curriculum Visual Supports Wiki - <http://fdlrsregion3curriculumvisuals.wikispaces.com/> . extensive collection of downloadable visual resources created with Boardmaker 6.0 on geography, natural disasters, biomes, health & safety, money, and time
6. Literacy Visual Supports Wiki - <http://fdlrsregion3literacyvisuals.wikispaces.com/> . extensive collection of downloadable visual resources created with Boardmaker 6.0 on antonyms, compound words, homophones, syllables, math vocabulary, science vocabulary, and word families



# Unlocking Human Potential

## BEESS Technology Services

The Florida Department of Education Bureau of Exceptional Education and Student Services provides a wide variety of technology supports and services to increase student achievement and unlock the incredible potential in all students.



### Technology & Learning Connections – MTSS (TLC)

<http://www.tlc-mtss.com>

Technology & Learning Connections (TLC) is a part of Florida's MTSS Projects; targeting the increase of student achievement through the systemic alignment of technology, policies, and curriculum. The TLC Team provides statewide technical assistance to support a universal, differentiated core curriculum based on the common core state standards within a multi-tiered system of supports.

### Florida Diagnostic & Learning Resources System (FDLRS)

<http://www.fdlrs.org>

The FDLRS Centers are located throughout the state and have Technology Specialists available to train and consult on accessible instructional materials, assistive technology, instructional technology, and Universal Design for Learning for students with disabilities.

### Assistive Technology & Universal Design for Learning Loan Library

<http://www.at-udl.net>

The AT & UDL Loan Library is a statewide resource center for BEESS Discretionary Projects, districts, and Local Assistive Technology Specialists (LATS) in supporting the availability of assistive and Universal Design for Learning technologies to support assessment/evaluation procedures, classroom demonstrations, and professional development activities.

### Resource Materials and Technology Center for the Deaf and Hard of Hearing

<http://www.fsdb.k12.fl.us/rmc/>

RMTC-D/HH is a statewide resource center serving teachers of the deaf and hard of hearing throughout Florida, giving teachers of deaf and hard-of-hearing students the technology assistance, training, and consultation they need to successfully integrate technology into their classroom routine. In addition to providing teachers and interpreters with a lending library of over 1,300 captioned and/or signed videotapes, the RMTC website includes extensive technology resources and tutorials for teachers, parents, and students.

### Florida Instructional Materials Center for the Visually Impaired & Florida NIMAS

<http://www.fimcvi.org/>

FIMC-VI is a statewide resource center designed to assist schools in obtaining specialized materials for student with visual impairments. Materials are produced by the Center staff, prepared by certified transcribers, and/or purchased by the Center. These materials are then loaned to schools within Florida. Consultation and training are also provided to instructional personnel throughout the state. FIMC-VI also coordinates all Florida NIMAS services and media production.

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